

VPDES PERMIT FACT SHEET

This document gives pertinent information concerning the **reissuance** of the VPDES permit listed below. This permit is being processed as a **Major**, Industrial permit. The industrial discharges result from the generation of electricity (station capacity of 1625 megawatts) with steam produced by the fission of nuclear fuel. The permit also addresses the discharge from a privately owned sewage treatment plant, as well as discharge from the storage of petroleum in above ground storage tanks. The effluent limitations contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260 et seq. This permit action consists of evaluating effluent data, revising permit limitations and monitoring requirements, and revising permit special conditions.

1. Facility Name and Address: Surry Power Station & Gravel Neck
5570 Hog Island Road
Surry, VA 23883

Facility Contact Name: Phyllis G. Wells
Title: Environmental Compliance Coordinator
Telephone: (757) 365-2377
Email: phyllis.g.wells@dom.com
SIC: 4911 – Electric Services
2. Permit Number: VA0004090
Permit Expiration Date: January 21, 2012
3. Owner Name and Address: Virginia Electric & Power Company
5000 Dominion Boulevard
Glen Allen, VA 23060

Owner Contact Name: Cathy C. Taylor
Title: Director, Electric Environmental Services
Telephone: (804) 273-2929
Email: catherine.c.taylor@dom.com
4. Application Complete: Date: July 11, 2011

| | | | |
|--------------------|----------------|-------|---------------------------------------------------------|
| Permit Drafted By: | Jeremy Kazio | Date: | October 5, 2012, November 13, 2012 |
| | Brian Wrenn | Date: | August 7, 2015 |
| Reviewed By: | Emilee Adamson | Date: | December 19, 2012, December 27, 2012, September 1, 2015 |
| | Curt Linderman | Date: | March 5, 2013, March 22, 2013, November 6, 2015 |
| | Kyle Winter | Date: | March 25, 2013, September 2, 2015 |
| | EPA Region III | Date: | December 29, 2015 |

Public Comment Period Dates: January 20, 2016 to February 22, 2016
Published Dates: January 20, 2016 and January 27, 2016 in *Sussex-Surry Dispatch*

5. Receiving Stream Information:

| | Process Discharge | Stormwater Runoff | | | | |
|------------------------|---------------------|----------------------------------|----------------------------------|---------------------------------------|---------------------|---------------------|
| | Outfall 001 | Outfall 002 | Outfall 050 | Outfall 051 | Outfall 052 | Outfall 053 |
| Receiving Stream Name: | James River | Unnamed Tributary to James River | Unnamed Tributary to James River | Unnamed Tributary to Hog Island Creek | James River | James River |
| Basin: | James River (Lower) | James River (Lower) | James River (Lower) | James River (Lower) | James River (Lower) | James River (Lower) |
| Subbasin: | NA | NA | NA | N/A | NA | NA |
| Section: | 1 | 1a | 1a | 1 | 1 | 1 |
| Class: | II | III | III | III | II | II |
| Special Standards: | a, bb | None | None | None | a, bb | a, bb |
| Rivermile: | 2-JMS037.30 | 2-XTD002.15 | 2-XTD001.80 | 2-CXBO000.42 | 2-JMS029.34 | 2-JMS029.27 |

| | | | | | | |
|-------------------------|-----|----|----|----|-----|-----|
| Tidal Receiving Stream? | YES | NO | NO | NO | YES | YES |
|-------------------------|-----|----|----|----|-----|-----|

| | | | | | | |
|-----------------|-----|----|----|-----|-----|-----|
| On 303(d) List? | YES | NO | NO | YES | YES | YES |
|-----------------|-----|----|----|-----|-----|-----|

| | | |
|-----------------------------------|------------|-----------------|
| 7-Day, 10-Year Low Flow (7Q10): | NA - Tidal | NA – Stormwater |
| 1-Day, 10-Year Low Flow (1Q10): | | |
| 30-Day, 5-Year Low Flow (30Q5): | | |
| 30-Day, 10-Year Low Flow (30Q10): | | |
| 7Q10 High Flow: | | |
| 1Q10 High Flow: | | |
| Harmonic Mean Flow (HM): | | |

| Tidal Dilution Multipliers (Applicable to Outfall 001 ONLY) | | |
|---------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Acute | ESR = 0.70:1 | ESR = Effluent to Stream Ratio (Concentration of whole effluent in stream, in parts) DM = Dilution Multiplier (Parts stream divided by parts effluent) |
| | DM = 1.43 | |
| Chronic | ESR = 0.69:1 | |
| | DM = 1.45 | |
| Human Health | ESR = 0.66:1 | |
| | DM = 1.52 | |

Please see **Attachment A** for Flow Frequency Memo by J.V. Palmore revised 10/3/2012 and *Mixing and Dilution of the Surry Nuclear Power Plant Cooling Water Discharge in the James River* by J.M. Hamrick, A.Y Kuo, and J. Shen dated July 1995 and submitted to DEQ on August 11, 1995 (see Table 4 – “Maximum tidal cycle averaged relative concentrations with respect to concentrations in the cooling canal discharge”).

6. Operator License Requirements: Class III (Sewage Treatment Plant). Licensed operator not required for discharges from Outfalls 001 and 002 because there are no forms of biological, chemical, or physical treatment as intended by the requirements contained in 9 VAC 25-31-200.C of the *VPDES Permit Regulation*
7. Reliability Class: Class II (Sewage Treatment Plant)
8. Permit Characterization:
- | | |
|----------------------------------------|----------------------------------------|
| (X) Existing Discharge | (X) Reissuance |
| (X) Water Quality Limited | (X) Industrial (SIC=4911) |
| (X) Discharge to 303(d) Listed Segment | |
| (X) PVOTW | (X) Toxics Management Program Required |
| (X) Private | (X) Stormwater Management Plan |
| | (X) Effluent Limited |
9. Discharge Description

| Outfalls Limited and Monitored in Part I.A.1 | | | | |
|----------------------------------------------|----------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|------------------------|
| Outfall No. | Discharge Source | Description | Treatment | Max. 30-day flow (MGD) |
| 001 | Units 1 & 2 Condensers (and internal outfalls 101 through 122) | Once-through non-contact cooling water & Internal Outfalls 101-122 | Mixing, cooling, and periodic disinfection for biofouling control. | 2300.396 |

| Internal Outfalls Limited and Monitored in Part I.A.3 | | | | |
|-------------------------------------------------------|------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| Outfall No. | Discharge Source | Description | Treatment | Max. 30-day flow (MGD) |
| 101 | Sewage Treatment Plant | The treatment plant treats domestic wastewater originating from Surry Power Station's sanitary drains. | Flow equalization, screening, settling, grinding, activated sludge, disinfection (chlorination), aerobic digestion (sludge), sludge drying beds (rarely used). | 0.038238 (design flow = 0.085) |

| Internal Outfalls Limited and Monitored in Part I.A.5 | | | | |
|-------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------|-----------------------------------|------------------------|
| Outfall No. | Discharge Source | Description | Treatment | Max. 30-day flow (MGD) |
| 102 | Turbine Sump A | The turbine sumps collect water and hydraulic/lube oil leakage from components within the turbine building. | Flotation, settling, oil skimmer. | 0.0234 |
| 103 | Turbine Sump B | | | 0.05 |
| 106 | Turbine Sump C | | | 0.0234 |

| Internal Outfalls Limited and Monitored in Part I.A.6 | | | | |
|-------------------------------------------------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------------|
| Outfall No. | Discharge Source | Description | Treatment | Max. 30-day flow (MGD) |
| 104 | Reverse Osmosis (RO) Reject & Membrane Backwash | Well water is treated by reverse osmosis to provide makeup water to the Polishing Building. | None | 0.0216 |
| 107 | Package Boilers A & B | The auxiliary boilers provide steam to the Auxiliary Steam System when both nuclear reactors are shut down. These boilers are also performance tested once per year. Boiler wastewater (primarily boiler blowdown) is discharged. | None | 0.0031 |
| 109 | Radwaste Facility | The Radwaste Facility processes radioactive liquid waste. | Ion exchange, reverse osmosis | 0.0181 |
| 110 | Unit 1A Waste Neutralization Sump | The waste neutralization sumps collect and treat non-neutral pH wastewater produced during routine operation of the Condensate Polishing System and resin regeneration process. The treated wastewater can be discharged to the Settling Pond or to the Discharge Canal. | Settling, neutralization | 0.0279 |
| 111 | Unit 1B Waste Neutralization Sump | | | 0.0279 |
| 112 | Unit 2A Waste Neutralization Sump | | | 0.0279 |
| 113 | Unit 2B Waste Neutralization Sump | | | 0.0279 |
| 114 | Unit 1 Steam Generator Blowdown | Each Unit has 3 separate Steam Generators and 3 separate Steam Generator Blowdown Systems. The water used for the Steam Generators is treated by ion exchange, conditioned with additives for pH and corrosion control, and is recirculated within the system. Blowdown (i.e. purging of a specific volume of recirculated water) is necessary to regulate the chemistry of the recirculating water. The blowdown can be discharged to the discharge canal via these internal outfalls, or to the condenser hotwells for recirculation back into the steam system. | None | 0.0429 |
| 115 | Unit 2 Steam Generator Blowdown | | | 0.0429 |
| 118 | Unit 1 Condenser Hotwell Drain | The Condenser Hotwells (where steam condensate collects) are periodically drained for maintenance and inspection. Steam Generator Blowdown | None | 0.09 |

| | | | | |
|-----|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|---------------------------|
| 119 | Unit 2 Condenser Hotwell Drain | (see Outfalls 114 and 115 above) may be directed to these condenser hotwells. | | 0.09 |
| 120 | Low Conductivity Sump | This sump collects wastewater from the Condensate Polishing System operation and associated resin regeneration process. Only wastewater with neutral pH is discharged via this internal outfall. Wastewater outside of the neutral pH range is directed to the Waste Neutralization Sumps for additional treatment prior to release (Outfalls 110, 111, 112, and 113). This sump can be discharged to the Settling Pond or to the Discharge Canal. | Settling, neutralization | 0.038 |
| 121 | Unit 1 Steam Generator Hydrolance | Periodically, deionized water is used to clean the steam generators using a hydrolance (water blasting) process. | Filtration | 0.0005 |
| 122 | Unit 2 Steam Generator Hydrolance | | Filtration | 0.1025 (from application) |

| Internal Outfalls Limited and Monitored in Part I.A.7 | | | | |
|-------------------------------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|------------------------|
| Outfall No. | Discharge Source | Description | Treatment | Max. 30-day flow (MGD) |
| 105 | Oil Storage Tank Dike | The 210,000 gallon fuel oil tank located adjacent to the Discharge Canal serves the Auxiliary Boiler and Emergency Diesel Generators. The concrete dike provides emergency holding in the event of tank failure. Stormwater collected within the dike is released via a gate valve to the Discharge Canal. | None. Collected stormwater is visually inspected for petroleum, which if present is removed prior to release. | 0.05891 |

| Internal Outfalls Limited and Monitored in Part I.A.9 | | | | |
|-------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------|
| Outfall No. | Discharge Source | Description | Treatment | Max. 30-day flow (MGD) |
| 108 | Settling Pond | The Settling Pond receives discharges from internal outfalls 110, 111, 112, 113, and 120 (see outfall descriptions above). The Settling Pond also receives the discharge from the Gravel Neck oil/water separator, which is pumped to the Settling Pond via a lift station. Influent to the Gravel Neck oil/water separator includes discharges from: | Sedimentation, aeration | 0.049318 |
| | | 1) oil/water separators for individual combustion turbine units 3, 4, 5, & 6; | | |
| | | 2) compressor wash water and floor drains from combustion turbine units 3, 4, 5, & 6; | | |
| | | 3) RO reject from the mobile RO systems; | | |
| | | 4) Gravel Neck AST truck off-loading drains and emergency spill tank; | | |
| | | 5) stormwater collected within Gravel Neck fuel oil AST containment dike; | | |
| | | 6) water collected within Gravel Neck fuel oil AST dike from periodic pressure washing exterior of tanks; | | |
| | | 7) stormwater collected within Surry Power Stations' various fuel oil AST containment dikes | | |

| Internal Outfalls Limited and Monitored in Part I.A.10 | | | | |
|--------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------------|
| Outfall No. | Discharge Source | Description | Treatment | Max. 30-day flow (MGD) |
| 116 | Unit 1 Recirculation Spray Heat Exchanger (RSHX) | The RSHXs are part of an emergency system that maintains appropriate atmospheric pressure within the nuclear containment area. The RSHXs remove heat from water | None | 0.023 |

| | | | | |
|-----|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------------|
| 117 | Unit 2 Recirculation Spray Heat Exchanger | that collects in the containment sump. The supply water to these heat exchangers is James River water from the intake canal. The RSHXs are typically drained and maintained in a dry ready condition, but are tested once every other outage. | None | 2.982 (from application) |
|-----|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------------|

Outfalls Limited and Monitored in Part I.A.11

| Outfall No. | Discharge Source | Description | Treatment | Max. 30-day flow (MGD) |
|-------------|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|------------------------|
| 002 | Gravel Neck Gas Turbine Containment Dike | The 320,000 gallon fuel oil tank located between the newer combustion turbines and the intake canal serves the older backup combustion turbines. The dirt dike provides emergency holding in the event of tank failure. Stormwater collected within the dike is released via a gate valve. | None. Collected stormwater is visually inspected for petroleum, which if present is removed prior to release. | 0.02127 |

Outfalls Limited and Monitored in Part I.A.14

| Outfall No. | Discharge Source | Description | Treatment | Max. 30-day flow (MGD) |
|-------------|------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------|------------------------|
| 050 | Stormwater runoff from ~272 acres of drainage area located in the central portion of the Surry Power Station and Gravel Neck sites | Stormwater runoff | None | Weather dependent |
| 051 | Stormwater runoff from ~84 acres of drainage area located adjacent to and East of the drainage area contributing to Outfall 050 | | | |
| 052 | Stormwater runoff from ~10 acres of drainage area located adjacent to and North of the low level intake structure | | | |

| | | | | |
|-----|----------------------------------------------------------------------------------------------------------------|--|--|--|
| 053 | Stormwater runoff from ~10 acres drainage area located adjacent to and South of the low level intake structure | | | |
|-----|----------------------------------------------------------------------------------------------------------------|--|--|--|

Please see **Attachment B** for facility flow diagram, outfall location map, sewage treatment plant diagram and sludge haul route, stormwater outfall locations and drainage maps, and well location map.

10. **Sewage Sludge Use or Disposal:** Sewage sludge generated by the Surry Power Station Sewage Treatment Plant (Outfall 101) is hauled offsite by Duck's Septage Company (DSC). The sludge is either placed into an aerated septage lagoon that is operated by DSC or taken to the Sussex Service Authority's Black Swamp Regional Wastewater Treatment Plant in Waverly, VA. See **Attachment B** for sewage sludge haul directions and map.

It has not historically been necessary to remove sludge from the Settling Pond (Outfall 108). If it becomes necessary in the future, it is expected of the permittee that all solids removal and handling activities will be in conformance with the facility's Operations and Maintenance Manual in accordance with Part I.C.5.f of the 2015 permit.

11. **Discharge Location Description:**
See **Attachment C** for topographic map and aerial photographs. See below for external outfalls coordinates.

Map Name: Hog Island (066B) Quadrangle

| External Outfall No. | Latitude | Longitude |
|----------------------|----------|-----------|
| Outfall 001 | 37.17133 | -76.70423 |
| Outfall 002 | 37.16100 | -76.69285 |
| Outfall 050 | 37.16712 | -76.68959 |
| Outfall 051 | 37.16167 | -76.68315 |
| Outfall 052 | 37.15707 | -76.67109 |
| Outfall 053 | 37.15472 | -76.67109 |

12. **Material Storage:**
See **Attachment D** for chemicals that are or will be stored and/or used onsite within the 2015 permit cycle. The, handling, storage, and use of these chemicals are expected to be in accordance with Part I.C.2 (Materials Handling/Storage) and Part I.C.26 (Best Management Practices) of the 2015 permit.

In addition, the Surry Power Station and Gravel Neck facilities have multiple ASTs and other containers used for fuel oil or chemical storage located outdoors. The nature of stored material and maximum volume of each tank/container is listed below. Please note that chemical storage does not occur outdoors at the Gravel Neck site:

| Surry Power Station – Petroleum ASTs | | | |
|---------------------------------------|----------------|----------------------|-------------------------------------------|
| Container Name / ID No. | Product Stored | Total Capacity (gal) | Secondary Containment Volume (gal) / Type |
| 1-HS-TK-1 | No. 2 Fuel Oil | 210,000 | 228,904 / Concrete Floor and Wall |
| 1-UO-TK-1 | Used Oil | 10,000 | 12,320 / Concrete Floor and Walls |
| Administration Building EDG Fuel Tank | No. 2 Fuel Oil | 1,500 | 1,621 / Integral Steel |
| Base Tank 1 | No. 2 Fuel Oil | 550 | 1,550 / EDG Room with Concrete Curb |

| Surry Power Station – Petroleum ASTs | | | |
|-----------------------------------------------------|------------------|----------------------|-------------------------------------------|
| Container Name / ID No. | Product Stored | Total Capacity (gal) | Secondary Containment Volume (gal) / Type |
| Base Tank 2 | No. 2 Fuel Oil | 550 | 1,550 / EDG Room with Concrete Curb |
| Base Tank 3 | No. 2 Fuel Oil | 550 | 1,550 / EDG Room with Concrete Curb |
| EDG 1 Day Tank (1-EE-TK-3) | No. 2 Fuel Oil | 541 | 832 / EDG Room with Concrete Curb |
| EDG 2 Day Tank (2-EE-TK-3) | No. 2 Fuel Oil | 541 | 832 / EDG Room with Concrete Curb |
| EDG 3 Day Tank (1-EE-TK-4) | No. 2 Fuel Oil | 541 | 832 / EDG Room with Concrete Curb |
| EDG/ISFSI | No. 2 Fuel Oil | 205 | >205 / Double-walled tank |
| Emergency Service Water Pump Fuel Tank (1- SW-TK-1) | No. 2 Fuel Oil | 4,800 | 6,488 / Room with Concrete Curb |
| Fire Water Diesel Fuel Tank (1-FP-TK-4) | No. 2 Fuel Oil | 370 | 570 / Fire Pump House with Concrete Curb |
| NSS Garage Engine Oil Tank (VP-75-T-2) | Engine Oil | 580 | / Double wall tank |
| NSS Garage Hydraulic Oil Tank (vP-75-T-3) | Hydraulic Oil | 580 | / Double wall tank |
| NSS Garage Used Oil Tank / (VP-75-T-1) | Used Oil | 300 | / Double wall tank |
| Oil Recovery System Tank (1-UO-TK-3) | Oil | 300 | >300 / Metal curbed concrete pad & sump |
| SBO Generator Tank (Blackout Diesel) (0-BFO-TK-1) | No. 2 Fuel Oil | 1,217 | 1,676 / Concrete Floor and Dike |
| Security EDG 0-SE-DG-3 Base Tank | Diesel Fuel | 300 | / Double wall tank |
| Security FAP EDG Tank / 0-SE-EG-2 | No. 2 Fuel Oil | 112 | >112 / Double-Walled Tank |
| Turbine Lube Clean Oil (1-LO-TK-2) | Turbine Lube Oil | 22,000 | 62,313 / Enclosed Concrete Area |
| Turbine Lube Used Oil (1-LO-TK-3) | Turbine Lube Oil | 22,000 | 62,313 / Enclosed Concrete Area |
| Total Petroleum AST Volume --> | | 277,537 | |

| Surry Power Station – Chemical Container Storage | | | |
|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------|----------------------------|--------------------------------------------------------------------------------------|
| Container Name / ID No. | Product Stored | Total Capacity (gal) | Secondary Containment Volume (gal) / Type |
| No ID # Six - Polyurethane 3 for Unit 1 and 3 for Unit 2 High level Chemical Injection System | Sodium hypochlorite - 15% max / balance water, typical value of 13% | Each 3000 gal (max) tanks, | Poleyurethane containment for each tank can hold the entire 12,000 gallon for system |
| No ID # Two - Polyurethane 1 for Unit 1 and 1 for Unit 2 High level Chemical Injection System | Acti-Brom 1318 - 30 to 60% / balance water, typical value 43%. | Each 3000 gal (max) tanks, | Poleyurethane containment for each tank can hold the entire 12,000 gallon for system |
| 1-CS-TK-2 Unit 1 RWST* Chemical Addition Tank | 17-18% NaOH (Sodium Hydroxide) | 4311 gallons | No |
| 2-CS-TK-2 Unit 2 RWST Chemical Addition Tank | 17-18% NaOH (Sodium Hydroxide) | 4311 gallons | No |

| Gravel Neck – Petroleum ASTs | | | |
|-----------------------------------------|----------------|----------------------|-------------------------------------------|
| Container Name / ID No. | Product Stored | Total Capacity (gal) | Secondary Containment Volume (gal) / Type |
| 00-FO-TK-1A | Fuel Oil No. 2 | 3,177,000 | 3,190,208/Diked Area |
| 00-FO-TK-1B | Fuel Oil No. 2 | 3,177,000 | 3,190,208/Diked Area |
| 02-FO-TK-1C | Fuel Oil No. 2 | 320,000 | 312,782/Diked Area |
| Filter Drain Tank | Used Oil | 270 | 1,000/OWS to VPDES Sump and Pond |
| Mist Vapor Holding Tank 1 | Fuel Oil No. 2 | 250 | 1,000/OWS to VPDES Sump and Pond |
| Mist Vapor Holding Tank 2 | Fuel Oil No. 2 | 250 | 1,000/OWS to VPDES Sump and Pond |
| Mobile Oil Tank | Used Oil | 500 | 1,000/OWS to VPDES Sump and Pond |
| Unit 1 and 2 Emergency Diesel Generator | Diesel Fuel | 171 | 235,100/Stormwater basin |
| Unit 1 Oil Sump | Fuel Oil No. 2 | 434 | 235,100/Stormwater Retention Basin |

| | | | |
|--------------------------------|-------------|------------------|--------------------------|
| Unit 2 Diesel Fuel Tank | Diesel Fuel | 203 | 235,100/Stormwater basin |
| Total Petroleum AST Volume --> | | 6,676,078 | |

13. Ambient Water Quality Information (Outfalls 001 ONLY, not applicable to stormwater outfalls):
Outfall 001 - Water quality information used for the evaluation of the discharge from Outfall 001 are derived from data collected at DEQ's ambient monitoring station 2-JMS041.27. The station is located at the Scotland Ferry pier approximately 3.97 miles upstream of the discharge. However, hardness data were not collected at this station; therefore hardness data from station 2-JMS050.57 were used. The station is located at buoy 66 above the confluence with the Chickahominy River and is 13.27 miles upstream of the discharge.
(see **Attachment E** for raw data and statistically derived values from monitoring stations 2-JMS041.27 and 2-JMS050.57).
14. Antidegradation Review & Comments:
- | | | | | | | |
|--------------|--------|----------|--------|-------|--------|-------|
| Outfall 001: | Tier 1 | <u>X</u> | Tier 2 | _____ | Tier 3 | _____ |
| Outfall 002: | Tier 1 | <u>X</u> | Tier 2 | _____ | Tier 3 | _____ |
| Outfall 050: | Tier 1 | <u>X</u> | Tier 2 | _____ | Tier 3 | _____ |
| Outfall 051: | Tier 1 | <u>X</u> | Tier 2 | _____ | Tier 3 | _____ |
| Outfall 052: | Tier 1 | <u>X</u> | Tier 2 | _____ | Tier 3 | _____ |
| Outfall 053: | Tier 1 | <u>X</u> | Tier 2 | _____ | Tier 3 | _____ |

The State Water Control Board's Water Quality Standards includes an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect those uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The anti-degradation review begins with a Tier determination.

Outfall 001 & Outfall 052: The James River had previously been considered a Tier 2 water at the discharge points. However, due to the benthic impairment in the oligohaline mainstem segment, the James is considered to be designated a Tier 1 waterbody.

Outfall 053: The James River had previously been considered a Tier 2 water at the discharge point. However, due to the benthic impairment in the mesohaline mainstem segment during the 2010 Assessment Cycle, the James is considered to be designated a Tier 1 waterbody.

Outfall 002, Outfall 050, & Outfall 051: Due to their intermittent natures, the receiving streams are considered to be Tier 1 water bodies.

(See **Attachment A** for Flow Frequency Memorandum by Jennifer V. Palmore, P.G. revised 10/3/2012)

15. Site Inspection: Date: October 21, 2014
Performed by: Shawn Weimer (See **Attachment F**)
16. Effluent Screening & Limitation Development:

Effluent Screening:

Effluent testing results submitted by the permittee in order to satisfy the requirements of EPA Form 2C and Attachment A for Outfall 001 and Outfall 002 have been summarized in **Attachment G** of this fact sheet. Also included in this attachment are DMR data submitted to DEQ between March 2007 and February 2012.

If it is feasible that a specific pollutant for which in-stream criteria are given in the *Virginia Water Quality Standards* (9 VAC 25-260 et.seq.) may exist in the facility's effluent, a Reasonable Potential Analysis must be conducted in order to determine if it is statistically probable that the permittee's future discharge may contain that pollutant in concentrations which are harmful to aquatic life and/or human health within the receiving stream. The first step of the analysis is to calculate the pollutant's wasteload allocations (WLAs), which are defined as the pollutant concentration that may be discharged by the facility over specific

periods of time which will maintain the in-stream criteria at the boundary of the effluent's mixing zone within the receiving stream. The WLAs are determined using a DEQ-sourced Excel spreadsheet called MSTRANTI, which requires inputs representing site specific data for critical flows, dilution, mixing, and water quality for both the receiving stream and the effluent.

For aquatic life Reasonable Potential evaluations, a desktop computer application called STATS is utilized to determine if future pollutant concentrations may exceed the aquatic life WLAs. The STATS application projects the WLA inputs, as well as observed effluent data, onto respective lognormal distributions. If the projected effluent distribution exceeds the most restrictive aquatic life WLA distribution, then a limitation is deemed necessary. The limitation is equal to the concentration expected to be observed at the required monitoring frequency of the most protective WLA distribution.

For human health reasonable potential evaluations, the WLAs are compared directly to the reported test results for the respective pollutant. If the test results exceed the human health WLA, then a limitation is deemed necessary. The human health WLA is directly applied as the monthly limitation, and the maximum daily or weekly average limitations are derived using multiplication factors in accordance with the January 10, 2001 memorandum by Dale Phillips titled "Advice for Daily Maximum and Weekly Average Limits for Human Health Based Limits".

The table in **Attachment G** mentioned above lists the WLAs for each pollutant of concern, as well as the determination of whether a limitation is needed after the aforementioned Reasonable Potential evaluations were applied. The following tables represent those pollutants for which limitations were determined to be necessary for the 2015 permit. Please note that the permittee submitted total recoverable metals data for internal Outfall 101, however, these data were not evaluated because this effluent stream is reflected by Outfall 001, and because WLAs cannot be calculated for internal outfalls.

Please note that the permittee submitted bacteriological test results for both *E.coli* and *Enterococcus* of 75 N/CML and >2420 N/CML, respectively, taken at the Outfall 001 discharge. The main source of effluent from this outfall is once through cooling water. There are no processes at this facility which contribute bacteria to the effluent other than the Sewage Treatment Plant, which discharges to the effluent canal through internal Outfall 101. The effluent from the Sewage Treatment Plant is limited for Fecal Coliform bacteria, and additionally, the permittee has demonstrated adequate disinfection through a successful Bacteria Demonstration Study conducted during the 2007 permit cycle. Between March 2007 and February 2012 the permittee did not violate their Fecal Coliform or minimum TRC limitations. Therefore, it is staff's judgment that the source of the elevated bacterial levels discharged through Outfall 001 may be attributed to background levels within the James River. Please note that the James River is not impaired for the Recreation Use at the Outfall 001 location, and thus the discharge has not caused, nor does it currently contribute to, any bacteriological impairments within the receiving water body.

Stormwater Screening:

Guidance Memo 96-001 recommends that chemical-specific water quality-based limits not be placed on storm water outfalls at this time because the methodology for developing limits and the proper method of sampling is still a concern and under review/reevaluation by EPA. Exceptions would be where a VPDES permit for a storm water discharge has been issued that includes effluent limitations (backsliding must be considered before these limitations can be modified) and where there are reliable data, obtained using sound, scientifically defensible procedures, which provide the justification and defense for an effluent limitation.

Where limitations are not established, pollutants are typically assessed against screening criteria developed solely to identify those additional pollutants that should be given special emphasis during development and assessment of the Stormwater Pollution Prevention Plan (SWPPP). The SWPPP, required by Part I.D.4 of the permit, is designed to reduce pollutants in storm water runoff. To determine which pollutants are of concern, storm water effluent data is compared to the more stringent of two times the pollutant's acute water quality criterion as outlined by the *Virginia Water Quality Standards* (WQS) or the pollutant's benchmark monitoring concentration as contained in DEQ's VPDES General Permit for Storm Water Associated with Industrial Activity and in the VPDES Permit Manual dated March 27, 2014, Section IN4 – Industrial Storm Water Discharges.

Benchmark pollutants are those pollutants that, due to the nature of the industrial activity or materials stored on the site, have the potential to contribute pollutants to their storm water discharges. While

pollutant benchmarks are established based on specific industrial activities, it is assumed that reported concentrations greater than any of the benchmarks, regardless of the industrial activity, warrant being reviewed. In the case of Outfall 002, there is no established sector for stormwater discharge associated with Combustion Turbine Stations under the VAR05 Industrial Stormwater General Permit (ISWGP) regulation 9VAC25-151; however, this outfall has been treated as a process water outfall historically and data submitted to DEQ demonstrate elevated levels of pollutants. For instance, the permittee was required to monitor for dissolved Copper and Zinc during the 2007-2012 permit cycle due to elevated levels of these pollutants reported in the 2006 application for Outfall 002. The 2007 permit also contained limitations for TSS, TOC, and TPH, which cannot be modified without a review of backsliding requirements (See the "Basis for Effluent Monitoring: Outfall 002" below and Item 17). Therefore, TSS, TOC, and TPH are included in the stormwater analysis.

A comparison of effluent data to the ISWGP benchmarks contained in 9VAC25-151-10 et seq. and to acute screening criteria, as applicable, is presented in the table below. Effluent data collected during the permit cycle and reported on Discharge Monitoring Reports (DMRs) from 2007 to 2012 is included in **Attachment G**. All data identified in the table below in italics are based on data reported on the permit application; all other data were reported on DMRs. Data not included were reported as believed absent or <QL and was considered absent for the purpose of this evaluation. Data in bold text indicate a concentration above the corresponding benchmark or screening value with the corresponding screening and/or benchmark value in bold text as well.

In cases where the reported concentrations exceed either screening criteria, the permit requires that the permittee implement control measures including Best Management Practices (BMPs) for the problem outfalls in accordance with the SWPPP to reduce the pollutant concentrations in the storm water runoff. The effectiveness of the SWPPP will be evaluated through the required monitoring for all parameters listed in Part I.A of the permit. During the term of the permit, monitoring data demonstrating effluent concentrations that exceed the screening criteria included in the permit will trigger action by the permittee, including review of the SWPPP and control measure.

| Outfall 002 | | | | |
|------------------------------------|-------|------------------------|-----------------|-----------------|
| Pollutant | Units | Highest Detected Value | Screening Level | Benchmark Value |
| pH | SU | 5.10* | -- | 6.0 – 9.0 |
| Total Suspended Solids (TSS) | mg/L | 28.1 | -- | 100 |
| Total Organic Carbon (TOC) | mg/L | 16.8 | -- | 110 |
| Total Petroleum Hydrocarbons (TPH) | mg/L | <0.5 | -- | 15.0 |
| Copper, dissolved | µg/L | 32 | 7.3 | 18 |
| Zinc, dissolved | µg/L | 282 | 72 | 120 |

*This value was not the highest detected; however, it was the only value submitted that fell out of the 6.0 – 9.0 pH range. DMR data from 2010 shows that this value was within 0.5 sample units of rainwater and therefore, this value was not out of compliance with permit limitations and is not considered to exceed benchmark values (see **Attachment G** for the 2010 DMR).

For stormwater outfalls 050, 051, 052, and 053, no monitoring data was submitted with the application (see item 23.c below). Due to the fact that no characterization of the effluent from these outfalls has been conducted, the stormwater effluent monitoring requirements reflect the sector-specific benchmark pollutants for Sector O, Steam Electric Generating Facilities. Once the effluent has been characterized from these outfalls, the permit may be reopened to incorporate regular pollutant monitoring as indicated through the screening process.

Please see **Attachment H** for MSTRANTI and STATS printouts.

Permit Limitations and Monitoring Requirements Rationale:

▼ Basis for Effluent Limitations: Outfall 001 (Final Effluent Canal)

| EFFLUENT CHARACT. | BASIS | DISCHARGE LIMITATIONS | | | | MONITORING REQUIREMENTS | |
|--------------------------------------|-------|-----------------------------------------------------------------------------|----------------|------|-------|-------------------------|-------------|
| | | MONTHLY AVERAGE | WEEKLY AVERAGE | MIN. | MAX. | FREQ. | SAMPLE TYPE |
| Flow (MGD) | NA | NL | NA | NA | NL | Continuous | Recorded |
| pH (Standard Units) | 1, 2 | NA | NA | 6.0 | 9.0 | 2 per Month | Grab |
| Total Residual Chlorine (mg/L) | 1, 2 | 0.0080 | NA | NA | 0.016 | 1 per Day | Grab |
| Heat Rejected (BTU/HR) | 3 | Heat rejected shall not exceed a daily maximum of 12.6 x 10 ⁹ | | | | Continuous | Recorded |
| Intake pH (Standard Units) | NA | NA | NA | NL | NL | 2 per Month | Grab |
| Intake Total Suspended Solids (mg/L) | NA | NL | NA | NA | NL | 1 per 6 Months | Grab |
| Thallium, total recoverable (µg/L) | 2 | NL | NA | NA | NL | 1 per Year | Grab |

Basis for Limitations:

- 1) Water Quality Standards (9 VAC 25-260)
- 2) Permit Writer Judgment (PWJ)
- 3) 316(a) Demonstration Report

pH: GM95-012 suggests that pH limits **not** be applied to once-through cooling water discharges that intake from and discharge to the same water body due to a lack of reasonable potential that pH would be changed by the process, even in the event of equipment failure. Additionally, GM95-012 advises that the permittee has no control over the pH of the intake water and no reasonable remedy in the event that the intake water fails to meet the Water Quality Standards. For this facility, even though once-through cooling water comprises the bulk of the discharge through Outfall 001, this outfall also includes multiple low volume internal outfalls which may have a bearing on the pH levels of the discharge, especially during plant outages or in the event of equipment failure. Consequently, in accordance with the "Exclusions" section of GM95-012 (Pg. 3), pH limitations are considered to be appropriate for the facility's discharge because "... chemical additives, routine operation, equipment failure or leakage could change the pH of the cooling water." The pH limitations required in 40 CFR 423.12(b)(1) of the Federal Effluent Guidelines (6.0-9.0 SU) are specifically exempted from being applied to once-through cooling water discharges, and therefore, the pH limitations required in the 2015 permit for Outfall 001 are based on the Water Quality Standards (9 VAC 25-260-50.- Class II Estuarine Waters).

However, with regard for the abovementioned statement in GM95-012 concerning the permittee having no control over intake pH levels, footnote (b) in Part I.A.1 of the 2015 permit allows that pH be maintained within 0.5 SU's of the intake pH values when intake pH values are observed outside of the limitation range. This permit requirement aids in ensuring that the permittee consistently provides controls for the overall influence that the facility's daily processes may have on the influent pH levels. It should be noted that pH data reported with DMRs submitted between March 2007- February 2012 for the Outfall 001 discharge included a 5 year maximum of 8.5 SU and minimum of 6.9 SU, while the intake pH data for the same time period included a 5 year maximum of 8.46 SU and minimum of 6.43 SU. These values are within the 2007 permit limits as well as the 2015 proposed permit limits of 6.0-9.0 SU.

Total Residual Chlorine (TRC): Chlorine compounds may be added to the facility's service water as an anti-biofouling agent. Additionally, chlorine is also used for disinfection at the onsite wastewater treatment plant discharging through Outfall 101. In accordance with GM14-2003 (IN-3, Pg.21), if chlorine has the potential to exist in the discharge, a TRC limit should be placed in the permit that reflects the more stringent of either water quality-based limit or an applicable effluent guideline technology-based limit. The applicable Federal

Effluent Guideline for this facility (40 CFR 423.13(b)(1)) includes a maximum TRC limitation of 0.20 mg/L. In order to determine if this value is more or less stringent than the water quality based limit, a Reasonable Potential and Limitation Evaluation was conducted for TRC as explained above. GM 00-2011 requires that an effluent value of 20 mg/L be entered into STATS as effluent data in order to bypass the program's Reasonable Potential Analysis in cases where TRC is purposely introduced or known to exist in the facility's effluent. The resulting limitations for TRC are 0.016 mg/L maximum and 0.0080 mg/L monthly average, which are more stringent than the FEG based limitation. Please note that the TRC limitation in the 2015 permit is more stringent than the TRC limitation in the 2007 permit because the WLAs for Chlorine Producing Oxidants were used instead of TRC due to: 1) the WLAs being more stringent than the TRC WLAs, and 2) the permittee's close proximity to the border between estuarine waters and transition waters on the James River. Chlorinated effluents which are discharged to salt water react to produce chlorine produced oxidants that have a toxic impact similar to TRC in freshwater. It is assumed that CPO in salt water receiving streams is controlled by the effluent TRC limit and are therefore interchangeable. A compliance schedule for the new TRC limitation is not included for the 2015 permit because it is staff's judgment that the permittee will be able to meet the new limitation immediately upon permit reissuance based on historic DMR data.

Heat Rejected: Pursuant to a Study Plan approved by the Board, Virginia Power conducted a 316(a) study and submitted a §316(a) Demonstration Report on September 1, 1977. The Board reviewed the report and found that effluent limitations more stringent than the thermal limitations included in the 2015 permit are not necessary to assure the protection and propagation of a balanced, indigenous community of shellfish, fish, and wildlife in the James River. 9 VAC 25-260-90 of the *Virginia Water Quality Standards* states that a satisfactory showing made in conformance with § 316(a) shall be deemed compliant with the general standard and with the temperature requirements of the standards. Virginia Power declared in the 2011 permit renewal application that there have been no substantial changes in the conditions described in the 316(a) Demonstration Report. The 316(a) variance is therefore, continued.

Intake pH: Monitoring only is included in the 2015 permit so that the impact of the power station on pH at Outfall 001 can be accurately determined. See pH limitation rationale above.

Intake Total Suspended Solids: Monitoring only is included in the 2015 permit so that the net increase produced by Outfalls 102, 103, 106, 116, and 117 can be calculated. These internal outfalls include the discharge of water sourced from the facility's intake canal. See Item 9 of this fact sheet for outfall descriptions.

Thallium: Monitoring for Thallium has been included in the 2015 permit due to concentrations observed in the effluent greater than the human health WLAs. See the chart below for concentration data submitted with the 2011 permit application. On September 27, 2012, Dominion provided additional Thallium data indicating a concentration less than a QL of 5 µg/L at Outfall 001. Due to the data variability, it is staff's judgment that a limitation is not warranted at this time, but that additional data should be collected through regular monitoring for Thallium to determine if a limitation may be necessary in a future permit reissuance.

| Pollutant | Test Results (µg/L) | | 2012 Wasteload Allocations (µg/L) | | | |
|-----------|---------------------|-----------|-----------------------------------|------------------|-----------------------|-------------------|
| | 2011 Application | 9/27/2012 | WLA _a | WLA _c | WLA _{HH-PWS} | WLA _{HH} |
| Thallium | Dissolved = 6.2 | <5 | NA | NA | 0.24 | 0.71 |
| | Total Rec. = 8.1 | | | | | |

▼ **Basis for Effluent Limitations: Outfall 101 (Wastewater Treatment Plant)**

| EFFLUENT CHARACT. | BASIS | DISCHARGE LIMITATIONS | | | | MONITORING REQUIREMENTS | |
|---------------------|-------|-----------------------|----------------|------|------|-------------------------|-------------|
| | | MONTHLY AVERAGE | WEEKLY AVERAGE | MIN. | MAX. | FREQ. | SAMPLE TYPE |
| Flow (MGD) | NA | NL | NA | NA | NL | Continuous | Recorded |
| pH (Standard Units) | 2 | NA | NA | 6.0 | 9.0 | 1 per Day | Grab |

| EFFLUENT CHARACT. | BASIS | DISCHARGE LIMITATIONS | | | | MONITORING REQUIREMENTS | |
|--------------------------------------|-------|-----------------------|----------------|------|------|-------------------------------------------------------------|---------------------------|
| | | MONTHLY AVERAGE | WEEKLY AVERAGE | MIN. | MAX. | FREQ. | SAMPLE TYPE |
| BOD ₅ (mg/L) | 2 | 30 | NA | NA | 45 | 1 per 2 Months | 4 HC |
| TSS (mg/L) | 2 | 30 | NA | NA | 45 | 1 per 6 Months | 4 HC |
| <i>Enterococci</i> (n/100 mL) | 1, 3 | 35 geometric mean | NA | NA | NA | 4 Days per Month (between 10 a.m. and 4 p.m.) once per year | Grab |
| Fecal coliform (n/100 mL) | 3 | 200 geometric mean | NA | NA | NA | 4 Days per Month (between 10 a.m. and 4 p.m.) once per year | Grab |
| Total Phosphorous (TP) (mg/L) | 4 | NL | NA | NA | NL | 1 per Year | Grab |
| Total Kjeldahl Nitrogen (TKN) (mg/L) | 4 | NL | NA | NA | NL | 1 per Year | Grab |
| Nitrite + Nitrate (mg/L) | 4 | NL | NA | NA | NL | 1 per Year | Grab |
| Total Nitrogen (TN) (mg/L) | 4 | NL | NA | NA | NL | 1 per Year | Calculated ^(g) |

Basis for Limitations:

- 1) Water Quality Standards (9 VAC 25-260)
- 2) Federal Effluent Guidelines (40 CFR 133.102)
- 3) Permit Writer Judgment (PWJ)
- 4) GM14-2011

pH, BOD₅, and TSS: These limitations are based on 40 CFR 133.102 of the Federal Effluent Guidelines (FEGs) for Secondary Treatment Standards. Please note that the weekly (7-day) average limitations for BOD₅ and TSS recommended by the FEGs have been applied as maximum limitations in the 2015 permit in order to align with the permit limitations at other industrial internal outfalls which discharge to Outfall 001.

Enterococci: The limitation for *Enterococci* is expected to protect the primary contact recreation use bacteria criteria outlined in 9 VAC 25-260-170 (Water Quality Standards). The *Enterococci* in-stream criteria for protection of saltwater is 35N/100 mL colony forming units (CFU) and is based on a monthly geometric mean resulting from at least 4 weekly samples. The 2007 permit reissuance incorporated a new limitation for *Enterococci*, but allowed the permittee the option of performing a Bacteria Demonstration Study. If the requirements of the Study were met, the permittee would have been allowed to eliminate the bacterial limitation in lieu of utilizing chlorine concentration to demonstrate that proper disinfection was being performed. The permittee successfully completed the demonstration study and submitted the results to DEQ on 6/21/2007, and consequently, the *Enterococci* limitation did not become effective during the 2007 permit term. However, due to recent guidance from EPA prohibiting the use of surrogate parameters (i.e. in this case, TRC), the limitation has been included in the 2015 permit reissuance, but a reduced monitoring frequency of 4 weekly samples during the same month, once per calendar year is acceptable based on GM14-2003.

Fecal Coliform: The fecal coliform limitation is based on PWJ due to the internal outfall contributing to Outfall 001 which ultimately discharges to shellfish waters. Fecal coliform monitoring provides data directly

applicable to the protection of shellfish waters. Although the Water Quality Standards have been amended to remove the reference to this effluent limit in shellfish waters, the Virginia Department of Health, Bureau of Shellfish Sanitation still uses fecal coliform as an indicator for determining the quality of shellfish waters, and it is necessary to ensure discharges meet this level. Since it has historically maintained the in-stream water quality criteria for fecal coliform of 14/43 n/100 mL, the 200 n/100 mL effluent limit will be used in shellfish waters in order to continue meeting the in-stream criteria and for protection of shellfish under the general standard.

Nutrients: Nonsignificant dischargers are subject to aggregate wasteload allocations for TN, TP, and TSS under the Total Maximum Daily Load (TMDL) for Chesapeake Bay. Monitoring of TN, TP, and TSS is required in order to verify the aggregate wasteload allocations. For non-contact, once-through cooling water where the source water is ultimately the receiving water, nutrient monitoring is not considered appropriate. In this scenario, the permittee has no control over the nutrient concentrations of the intake water and the cooling process is not considered a source of nutrients. Therefore, nutrient monitoring is not required for Outfall 001, but is required for internal outfalls 101-115, 118-122, and Outfalls 002, 050, 051, 052, and 053. Internal outfalls 116 and 117 are associated with the Recirculation Spray Heat Exchangers which function as once-through cooling water as described above. Where TSS monitoring is already required for an outfall, additional TSS monitoring is not required as part of the verification of aggregate wasteload allocations.

▼ **Basis for Effluent Limitations: Outfalls 102, 103, 106 (Low Volume Waste Sources)**

| EFFLUENT CHARACT. | BASIS | DISCHARGE LIMITATIONS | | | | MONITORING REQUIREMENTS | |
|----------------------------------------------|-------|-----------------------|----------------|------|------|-------------------------|---------------------------|
| | | MONTHLY AVERAGE | WEEKLY AVERAGE | MIN. | MAX. | FREQ. | SAMPLE TYPE |
| Flow (MGD) | NA | NL | NA | NA | NL | 1 per 6 Months | Estimate |
| pH (Standard Units) | 2 | NA | NA | NL | NL | 1 per 6 Months | Grab |
| Total Suspended Solids – Net Increase (mg/L) | 1 | 30 | NA | NA | 100 | 1 per 6 Months | Grab |
| Oil and Grease (mg/L) | 1 | 15 | NA | NA | 20 | 1 per 6 Months | Grab |
| Total Phosphorous (TP) (mg/L) | 2 | NL | NA | NA | NL | 1 per Year | Grab |
| Total Kjeldahl Nitrogen (TKN) (mg/L) | 2 | NL | NA | NA | NL | 1 per Year | Grab |
| Nitrite + Nitrate (mg/L) | 2 | NL | NA | NA | NL | 1 per Year | Grab |
| Total Nitrogen (TN) (mg/L) | 2 | NL | NA | NA | NL | 1 per Year | Calculated ^(g) |

Basis for Limitations:

- 1) Federal Effluent Guidelines (40 CFR 423.12)
- 2) Permit Writer Judgment (PWJ)

pH: Monitoring only is required based on PWJ. Since pH is ultimately limited in accordance with the Water Quality Standards at Outfall 001, the technology based pH limitations contained 40 CFR 423.12(b)(1) of the FEGs are not necessary at this internal outfall. However, monitoring is required in order to aid in determining which contributing process may be the cause of pH violations, if any are observed, at Outfall 001.

Total Suspended Solids – Net Increase: Limitation is based on 40 CFR 423.12(b)(3) of the FEGs for low volume waste sources. The limitation is applied as a net increase with respect to the intake canal because the source water for these discharges is derived from the intake canal. Application as a net limitation is allowed by 9 VAC 25-31-230.G.2 (VPDES Permit Regulation) because the permittee has demonstrated,

through reporting of DMR data between March 2007-February 2012 showing a consistent net increase of zero, that the “. . .constituents of the generic measure in the effluent are substantially similar to the constituents of the generic measure in the intake water . . .”.

Oil and Grease: Limitation is based on 40 CFR 423.12(b)(3) of the FEGs for low volume waste sources.

Nutrients: See discussion above for Outfall 101.

▼ Basis for Effluent Limitations: Outfalls 104, 107, 109, 110, 111, 112, 113, 114, 115, 118, 119, 120, 121, 122 (Low Volume Waste Sources)

| EFFLUENT CHARACT. | BASIS | DISCHARGE LIMITATIONS | | | | MONITORING REQUIREMENTS | |
|--------------------------------------|-------|-----------------------|----------------|------|------|-------------------------|---------------------------|
| | | MONTHLY AVERAGE | WEEKLY AVERAGE | MIN. | MAX. | FREQ. | SAMPLE TYPE |
| Flow (MGD) | NA | NL | NA | NA | NL | 1 per 6 Months | Estimate |
| pH (Standard Units) | 2 | NA | NA | NL | NL | 1 per 6 Months | Grab |
| Total Suspended Solids (mg/L) | 1 | 30 | NA | NA | 100 | 1 per 6 Months | Grab |
| Oil and Grease (mg/L) | 1 | 15 | NA | NA | 20 | 1 per 6 Months | Grab |
| Total Phosphorous (TP) (mg/L) | 2 | NL | NA | NA | NL | 1 per Year | Grab |
| Total Kjeldahl Nitrogen (TKN) (mg/L) | 2 | NL | NA | NA | NL | 1 per Year | Grab |
| Nitrite + Nitrate (mg/L) | 2 | NL | NA | NA | NL | 1 per Year | Grab |
| Total Nitrogen (TN) (mg/L) | 2 | NL | NA | NA | NL | 1 per Year | Calculated ^(g) |

Basis for Limitations:

- 1) Federal Effluent Guidelines (40 CFR 423.12)
- 2) Permit Writer Judgment (PWJ)

pH: Monitoring only is required based on PWJ. Since pH is ultimately limited in accordance with the Water Quality Standards at Outfall 001, the technology based pH limitations contained 40 CFR 423.12(b)(1) of the FEGs are not necessary at this internal outfall. However, monitoring is required in order to aid in determining which contributing process may be the cause of pH violations, if any are observed, at Outfall 001.

Total Suspended Solids: Limitation is based on 40 CFR 423.12(b)(3) of the FEGs for low volume waste sources.

Oil and Grease: Limitation is based on 40 CFR 423.12(b)(3) of the FEGs for low volume waste sources.

Nutrients: See discussion above for Outfall 101.

▼ Basis for Effluent Limitations: Outfall 105 (Oil Storage Tank Dike [Low Volume Waste Source])

| EFFLUENT CHARACT. | BASIS | DISCHARGE LIMITATIONS | | | | MONITORING REQUIREMENTS | |
|---------------------|-------|-----------------------|----------------|------|------|-------------------------|-------------|
| | | MONTHLY AVERAGE | WEEKLY AVERAGE | MIN. | MAX. | FREQ. | SAMPLE TYPE |
| Flow (MGD) | NA | NL | NA | NA | NL | 1 per 6 Months | Estimate |
| pH (Standard Units) | 2 | NA | NA | NL | NL | 1 per 6 Months | Grab |

| EFFLUENT CHARACT. | BASIS | DISCHARGE LIMITATIONS | | | | MONITORING REQUIREMENTS | |
|-------------------------------------------|-------|-----------------------|----------------|------|------|-------------------------|---------------------------|
| | | MONTHLY AVERAGE | WEEKLY AVERAGE | MIN. | MAX. | FREQ. | SAMPLE TYPE |
| Total Suspended Solids (mg/L) | 1 | 30 | NA | NA | 100 | 1 per 6 Months | Grab |
| Total Petroleum Hydrocarbons (TPH) (mg/L) | 2 | NL | NA | NA | NA | 1 per 6 Months | Grab |
| Oil and Grease (mg/L) | 1 | 15 | NA | NA | 20 | 1 per 6 Months | Grab |
| Total Phosphorous (TP) (mg/L) | 2 | NL | NA | NA | NL | 1 per Year | Grab |
| Total Kjeldahl Nitrogen (TKN) (mg/L) | 2 | NL | NA | NA | NL | 1 per Year | Grab |
| Nitrite + Nitrate (mg/L) | 2 | NL | NA | NA | NL | 1 per Year | Grab |
| Total Nitrogen (TN) (mg/L) | 2 | NL | NA | NA | NL | 1 per Year | Calculated ^(g) |

Basis for Limitations:

- 1) Federal Effluent Guidelines (40 CFR 423.12)
- 2) Permit Writer Judgment (PWJ)

pH: Monitoring only is required based on PWJ. Since pH is ultimately limited in accordance with the Water Quality Standards at Outfall 001, the technology based pH limitations contained 40 CFR 423.12(b)(1) of the FEGs are not necessary at this internal outfall. However, monitoring is required in order to aid in determining which contributing process may be the cause of pH violations, if any are observed, at Outfall 001.

Total Suspended Solids: Limitation is based on 40 CFR 423.12(b)(3) of the FEGs for low volume waste sources.

Total Petroleum Hydrocarbons (TPH): Oil and grease limitations are required for low volume waste sources per 40 CFR 423.12(b)(3) of the FEGs. According to GM96-002 (entire document) and GM08-2006 (Fact Sheet, Section 6.1, Pg. 6), however, TPH is considered to be a good indicator of non-gasoline petroleum contamination. Therefore, based on PWJ, monitoring for TPH is required for the 2015 permit due to the nature of the potential source for contamination from this discharge point. Please note that requirements specifying that particular TPH test methods for diesel range organics (DRO) and gasoline range organics (GRO) be used by the permittee to determine compliance with the limitation have been added to the 2015 permit in order to match those required in DEQ's *General VPDES Permit for Petroleum Contamination Sites, Groundwater Remediation, and Hydrostatic Tests* (9 VAC 25-120).

Oil and Grease: Limitation is based on 40 CFR 423.12(b)(3) of the FEGs for low volume waste sources.

Nutrients: See discussion above for Outfall 101.

▼ **Basis for Effluent Limitations: Outfall 108 (Settling Pond Low Volume Waste Source)**

| EFFLUENT CHARACT. | BASIS | DISCHARGE LIMITATIONS | | | | MONITORING REQUIREMENTS | |
|---------------------|-------|-----------------------|----------------|------|------|-------------------------|-------------|
| | | MONTHLY AVERAGE | WEEKLY AVERAGE | MIN. | MAX. | FREQ. | SAMPLE TYPE |
| Flow (MGD) | NA | NL | NA | NA | NL | 1 per 3 Months | Measured |
| pH (Standard Units) | 2 | NA | NA | NL | NL | 1 per 3 Months | Grab |

| EFFLUENT CHARACT. | BASIS | DISCHARGE LIMITATIONS | | | | MONITORING REQUIREMENTS | |
|-------------------------------------------|-------|-----------------------|----------------|------|------|-------------------------|---------------------------|
| | | MONTHLY AVERAGE | WEEKLY AVERAGE | MIN. | MAX. | FREQ. | SAMPLE TYPE |
| Total Suspended Solids (mg/L) | 1 | 30 | NA | NA | 100 | 1 per 3 Months | Grab |
| Total Organic Carbon (mg/L) | 2 | NA | NA | NA | 110 | 1 per 6 Months | Grab |
| Total Petroleum Hydrocarbons (TPH) (mg/l) | 2 | NL | NA | NA | NA | 1 per Year | Grab |
| Oil and Grease (mg/L) | 1 | 15 | NA | NA | 20 | 1 per 3 Months | Grab |
| Total Phosphorous (TP) (mg/L) | 2 | NL | NA | NA | NL | 1 per Year | Grab |
| Total Kjeldahl Nitrogen (TKN) (mg/L) | 2 | NL | NA | NA | NL | 1 per Year | Grab |
| Nitrite + Nitrate (mg/L) | 2 | NL | NA | NA | NL | 1 per Year | Grab |
| Total Nitrogen (TN) (mg/L) | 2 | NL | NA | NA | NL | 1 per Year | Calculated ^(g) |

Basis for Limitations:

- 1) Federal Effluent Guidelines (40 CFR 423.12)
- 2) Permit Writer Judgment (PWJ)

pH: Monitoring only is required based on PWJ. Since pH is ultimately limited in accordance with the Water Quality Standards at Outfall 001, the technology based pH limitations contained 40 CFR 423.12(b)(1) of the FEGs are not necessary at this internal outfall. However, monitoring is required in order to aid in determining which contributing process may be the cause of pH violations, if any are observed, at Outfall 001.

Total Suspended Solids: Limitation is based on 40 CFR 423.12(b)(3) of the FEGs for low volume waste sources.

Total Organic Carbon (TOC): The limitation for TOC is carried over from the 2007 permit reissuance to the 2015 permit reissuance. The TOC limitation was initially based on PWJ and originates from previous agency guidance for permitting of Bulk Oil Storage Facilities (Permit Manual, issued July 1995, Appendix IN – Industrial, Part F.2.d). TOC is also utilized as an indicator parameter for non-petroleum organic substances in the *General Virginia Pollutant Discharge Elimination System (VPDES) Permit Regulation for Discharges from Petroleum Contaminated Sites, Groundwater Remediation, and Hydrostatic Tests* (VAG83) (see GM08-2006 Fact Sheet, Pg. 17). A large portion of contributing flow to this outfall is from the oil/water separator which serves the various drains around the Gravel Neck Combustion Turbine (CT) Station (see Item 9 of this fact sheet for a description of contributing flows to the oil/water separator). A large volume of number two fuel oil is stored at this site for use as an auxiliary fuel for the CT generators. The potential for non-gasoline petroleum product contamination supports the TOC limitation applied to this outfall.

Total Petroleum Hydrocarbons (TPH): Oil and grease limitations are required for low volume waste sources per 40 CFR 423.12(b)(3). According to GM96-002 and GM08-2006 (Fact Sheet, Section 6.1, Pg. 6), however, TPH is considered to be a better indicator of non-gasoline petroleum contamination than oil and grease. Therefore, based on PWJ, monitoring for TPH is required for the 2015 permit due to the nature of the potential source for contamination from this discharge point. Please note that requirements specifying that particular TPH test methods for diesel range organics (DRO) and gasoline range organics (GRO) be used by the permittee to determine compliance with the limitation have been added to the 2015 permit in order to match those required in DEQ's *General VPDES Permit for Petroleum Contamination Sites, Groundwater Remediation, and Hydrostatic Tests* (9 VAC 25-120).

Oil and Grease: Limitation is based on 40 CFR 423.12(b)(3) of the FEGs for low volume waste sources.

Please see **Attachment I** for a copy of 40 CFR 423, the Federal Effluent Guidelines for *Steam Electric Power Generating Point Source Category*.

Nutrients: See discussion above for Outfall 101.

▼ **Basis for Effluent Limitations: Outfalls 116, 117 (Recirculation Spray Heat Exchangers)**

| EFFLUENT CHARACT. | BASIS | DISCHARGE LIMITATIONS | | | | MONITORING REQUIREMENTS | |
|----------------------------------------------|-------|-----------------------|----------------|------|------|-------------------------|-------------|
| | | MONTHLY AVERAGE | WEEKLY AVERAGE | MIN. | MAX. | FREQ. | SAMPLE TYPE |
| Flow (MGD) | NA | NL | NA | NA | NL | 1 per 6 Months | Estimate |
| pH (Standard Units) | 2 | NA | NA | NL | NL | 1 per 6 Months | Grab |
| Total Suspended Solids – Net Increase (mg/L) | 1 | 30 | NA | NA | 100 | 1 per 6 Months | Grab |
| Oil and Grease (mg/L) | 1 | 15 | NA | NA | 20 | 1 per 6 Months | Grab |

Basis for Limitations:

- 1) Federal Effluent Guidelines (40 CFR 423.12)
- 2) Permit Writer Judgment (PWJ)

pH: Monitoring only is required based on PWJ. Since pH is ultimately limited in accordance with the Water Quality Standards at Outfall 001, the technology based pH limitations contained 40 CFR 423.12(b)(1) of the FEGs are not necessary at this internal outfall. However, monitoring is required in order to aid in determining which contributing process may be the cause of pH violations, if any are observed, at Outfall 001.

Total Suspended Solids – Net Increase: Limitation is based on 40 CFR 423.12(b)(3) of the FEGs for low volume waste sources. The limitation is applied as a net increase with respect to the intake canal because the source water for these discharges is derived from the intake canal. Application as a net limitation is allowed by 9 VAC 25-31-230.G.2 (VPDES Permit Regulation) because the permittee has demonstrated, through reporting of DMR data between March 2007-February 2012 showing a consistent net increase of zero, that the “. . . constituents of the generic measure in the effluent are substantially similar to the constituents of the generic measure in the intake water . . .”.

Oil and Grease: Limitation is based on 40 CFR 423.12(b)(3) of the FEGs for low volume waste sources.

▼ **Basis for Effluent Monitoring: Outfall 002 (Gravel Neck AST Containment Dike)**

| EFFLUENT CHARACT. | BASIS | DISCHARGE LIMITATIONS | | | | MONITORING REQUIREMENTS | |
|-----------------------------|-------|-----------------------|----------------|------|------|-------------------------|-------------|
| | | MONTHLY AVERAGE | WEEKLY AVERAGE | MIN. | MAX. | FREQ. | SAMPLE TYPE |
| Flow (MGD) | NA | NL | NA | NA | NL | 1 per 6 months | Estimate |
| Copper, Dissolved (µg/L) | 1 | NL | NA | NA | NL | 1 per 6 months | Grab |
| Zinc, Dissolved (µg/L) | 1 | NL | NA | NA | NL | 1 per 6 months | Grab |
| Total Organic Carbon (mg/L) | 2 | NA | NA | NA | NL | 1 per 6 Months | Grab |
| Total Phosphorous (TP) | 2 | NL | NA | NA | NL | 1 per 6 Months | Grab |

| EFFLUENT CHARACT. | BASIS | DISCHARGE LIMITATIONS | | | | MONITORING REQUIREMENTS | |
|----------------------------------|-------|-----------------------|-------------------|------|------|----------------------------|----------------|
| | | MONTHLY AVERAGE | WEEKLY AVERAGE | MIN. | MAX. | FREQ. | SAMPLE TYPE |
| Total Kjeldahl Nitrogen (TKN) | 2 | NL | NA | NA | NL | 1 per 6 Months | Grab |
| Nitrite+Nitrate | 2 | NL | NA | NA | NL | 1 per 6 Months | Grab |
| Total Nitrogen (TN) | 2 | NL | NA | NA | NL | 1 per 6 Months | Calculated |
| Total Suspended Solids (TSS) | 1, 2 | NL | NA | NA | NL | 1 per 6 Months | Grab |

Basis for Monitoring Requirements:

- 1) ISWGP Regulations (9VAC25-151)
- 2) Permit Writer Judgment (PWJ)

Outfall 002 has been converted from a process wastewater outfall to a stormwater outfall. The effluent limitations have been removed in this permit but monitoring for all parameters except pH, TPH, and PCBs has been maintained. See Item 17 for a discussion on antibacksliding.

pH: The pH limitation was based on PWJ and derived from 9 VAC 25-260-50 (Water Quality Standards) for discharges to Class II or Class III waters in the Piedmont and Coastal Zones. pH is also an ISWGP benchmark monitoring parameter. However, the permittee has previously demonstrated compliance with this limitation and recent data submitted with the 2012 application demonstrate that pH data meet benchmark and/or screening criteria. The limitation will be removed and benchmark monitoring will not be required because as GM14-2003 states, "if the monitoring data submitted by a permittee indicates conclusively that a parameter is not present in the storm water runoff above the benchmark concentration, then that parameter may be dropped."

Total Suspended Solids: Activities which contribute to the discharge from this outfall are not covered by any part of the Federal Effluent Guidelines or ISWGP regulations. It is unknown when the TSS limitation for this outfall first became effective, but the permittee has previously demonstrated compliance with this limitation and recent data submitted with the 2012 application demonstrate that TSS data are below benchmark and/or screening criteria. The limitation will be removed because as GM14-2003 states, "if the monitoring data submitted by a permittee indicates conclusively that a parameter is not present in the storm water runoff above the benchmark concentration, then that parameter may be dropped." However, nonsignificant dischargers are subject to aggregate wasteload allocations for Total Nitrogen (TN), Total Phosphorous (TP) and Sediments under the Total Maximum Daily Load (TMDL) for Chesapeake Bay. Monitoring of TSS is required in order to verify the aggregate wasteload allocations. TSS monitoring is also required as part of the industrial stormwater regulation (9VAC25-151-70) for discharges of stormwater subject to TMDL wasteload allocations.

Total Organic Carbon (TOC): Activities which contribute to the discharge from this outfall are not covered by any part of the Federal Effluent Guidelines or ISWGP regulations. The TOC limitation was originally derived from previous agency guidance for permitting of Bulk Oil Storage Facilities (Permit Manual, issued July 1995, Appendix IN – Industrial, Part F.2.d). TOC is also utilized as an indicator parameter for non-petroleum organic substances in the *General Virginia Pollutant Discharge Elimination System (VPDES) Permit Regulation for Discharges from Petroleum Contaminated Sites, Groundwater Remediation, and Hydrostatic Tests* (see GM08-2006 Fact Sheet, Pg. 17). Recent data submitted with the 2012 application demonstrate that TOC data are below benchmark and/or screening criteria. The numerical limitation will be removed; however, benchmark monitoring will be required for this permit term. At the next reissuance, if monitoring data demonstrates that TOC is not present in the discharge, the monitoring requirements may be removed. This would be done in accordance with GM14-2003 which states, "if the monitoring data submitted by a permittee indicates conclusively that a parameter is not present in the storm water runoff above the benchmark concentration, then that parameter may be dropped."

Total Petroleum Hydrocarbons (TPH): Activities which contribute to the discharge from this outfall are not covered by any part of the Federal Effluent Guidelines or ISWGP regulations. The TPH limitation was derived from agency guidance (Permit Manual, Section IN-5, Pg.5) for permitting of Bulk Petroleum Storage facilities. Additionally, according to GM08-2006 (Fact Sheet, Section 6.1, Pg. 6), TPH is considered to be an indicator parameter for contamination from non-gasoline petroleum products, and is thus limited in the *General Virginia Pollutant Elimination System (VPDES) Permit Regulation for Discharges from Petroleum Contaminated Sites, Groundwater Remediation, and Hydrostatic Tests*. However, the permittee has previously demonstrated compliance with this limitation, and recent data submitted with the 2012 application demonstrate that TPH concentrations are below benchmark and/or screening criteria. The limitation will be removed and benchmark monitoring will not be required because as GM14-2003 states, "if the monitoring data submitted by a permittee indicates conclusively that a parameter is not present in the storm water runoff above the benchmark concentration, then that parameter may be dropped."

Copper and Zinc: Monitoring requirements and stormwater management evaluation (see Part 1.D.1 of the 2015 permit) for these pollutants were determined to be necessary in accordance with the stormwater screening described above. In October 2012, the facility removed a large portion of a wooden walkway (treated lumber) that went all around the inside of the dike and also spread gravel inside the dike. Data submitted after implementation of this BMP are below screening criteria for both copper and zinc (see **Attachment G**); however, monitoring will still be required for these parameters to ensure that these trends remain consistent during the 2015 permit term.

Nutrients: Nonsignificant dischargers are subject to aggregate wasteload allocations for Total Nitrogen (TN), Total Phosphorous (TP) and Sediments under the Total Maximum Daily Load (TMDL) for Chesapeake Bay. Monitoring of TN and TP is required in order to verify the aggregate wasteload allocations. Nutrient monitoring is also required as part of the industrial stormwater regulation (9VAC25-151-70) for discharges of stormwater subject to TMDL wasteload allocations.

DEQ provided a letter to Dominion on March 20, 2006 stating concurrence with Dominion's arguments that a similar Combustion Turbine Station (e.g. Darbytown) was not included in the definition of "storm water associated with industrial activity" (**Attachment I**). Darbytown consists solely of combustion turbine power generation with no other industrial activities that would trigger industrial stormwater requirements. Storm water management at Combustion Turbine Stations is typically handled by the requirements of the plans developed under various oil regulatory programs (e.g., SPCC, ODCP, and FRP). However, because the combustion turbine station (Gravel Neck) and the nuclear power station (Surry) are covered under one permit and industrial activities (nuclear power generation, SIC Code 4911) at Surry do trigger industrial stormwater requirements, the entire facility is required to be covered under a stormwater pollution prevention plan (SWPPP) in accordance with 9VAC25-31-151-80.

▼ **Basis for Effluent Monitoring: Outfalls 050, 051, 052, 053 - Stormwater Runoff Outfalls**

| EFFLUENT CHARACT. | BASIS | DISCHARGE LIMITATIONS | | | | MONITORING REQUIREMENTS | |
|----------------------------------|-------|-----------------------|-------------------|------|------|----------------------------|----------------|
| | | MONTHLY AVERAGE | WEEKLY AVERAGE | MIN. | MAX. | FREQ. | SAMPLE TYPE |
| Flow (MGD) | NA | NL | NA | NA | NL | 1 per 6 months | Estimate |
| Iron, total (mg/L) | 1 | NA | NA | NA | NL | 1 per 6 months | Grab |
| Total Phosphorous (TP) | 2 | NL | NA | NA | NL | 1 per 6 Months | Grab |
| Total Kjeldahl Nitrogen (TKN) | 2 | NL | NA | NA | NL | 1 per 6 Months | Grab |
| Nitrite+Nitrate | 2 | NL | NA | NA | NL | 1 per 6 Months | Grab |
| Total Nitrogen (TN) | 2 | NL | NA | NA | NL | 1 per 6 Months | Calculated |

| EFFLUENT CHARACT. | BASIS | DISCHARGE LIMITATIONS | | | | MONITORING REQUIREMENTS | |
|---------------------------------|-------|-----------------------|-------------------|------|------|----------------------------|----------------|
| | | MONTHLY AVERAGE | WEEKLY AVERAGE | MIN. | MAX. | FREQ. | SAMPLE TYPE |
| Total Suspended Solids (TSS) | 2 | NL | NA | NA | NL | 1 per 6 Months | Grab |

Basis for Monitoring Requirements:

- 1) ISWGP Regulations (9VAC25-151)
- 2) Permit Writer Judgment (PWJ)

Iron: Discharges from outfalls 050, 051, 052, and 053 occur approximately every 18 months. Due to this fact, effluent characterization was not provided with this permit application. The benchmark pollutant, iron, for Sector O, Steam Electric Generating Facilities, has been included in this permit until the effluent can be characterized, per the Stormwater Management Conditions (Form 2F Sampling, Part I.D.1) of the permit. See Item 16. Stormwater Screening above.

Nutrients and Sediment: Nonsignificant dischargers are subject to aggregate wasteload allocations for Total Nitrogen (TN), Total Phosphorous (TP) and Sediments under the Total Maximum Daily Load (TMDL) for Chesapeake Bay. Monitoring of TN, TP, and TSS is required in order to verify the aggregate wasteload allocations. Nutrient and sediment monitoring is also required as part of the industrial stormwater regulation (9VAC25-151-10 et seq.) for discharges of stormwater subject to TMDL wasteload allocations.

17. Antibacksliding Statement : All limits in the 2015 permit are at least as stringent as the 2007 permit. The Total Phosphorus limitation formerly applied to Outfall 001 has been removed from the 2015 permit. During previous permit re-issuances, the Water Quality Standards assigned Special Standards NEW-19 to the receiving water body section, designating it as a Nutrient Enriched Water (NEW). Therefore, in accordance with 9VAC25-40-30 A. (Policy for Nutrient Enriched Waters), a limitation for Total Phosphorus was required. For the 2015 reissuance, the current Water Quality Standards (January 2011) have repealed the NEW designation to the receiving water body section, and consequently, the associated Total Phosphorus limitation is no longer applicable to this discharge. Therefore, in accordance with Guidance Memo 07-2008, Amendment 2 (Page 15), removal of the former TP limitation does not violate antibacksliding policies because: a) the facility is a non-significant industrial facility and therefore the discharge of nutrients are covered under the Watershed General Permit (see Item 23 of this fact sheet for further information); b) the limit is technology-based, so backsliding is permissible; c) a discharge to the Chesapeake Bay watershed is exempt from the 2.0 mg/L limit per 9VAC 25-40-30.D (Policy for Nutrient Enriched Waters); d) the facility has not installed nutrient control treatment; and e) the facility has not undertaken any process or site management changes in order to comply with the TP limit. Limitations for pH, TSS, TOC, and TPH have been removed from Outfall 002 (see Item 16). Activities which contribute to the discharge from Outfall 002 are not covered by any part of the Federal Effluent Guidelines or sector-specific ISWGP regulations and PWJ limitations were applied based on guidance for Bulk Oil Storage Facilities and the *General Virginia Pollutant Discharge Elimination System (VPDES) Permit Regulation for Discharges from Petroleum Contaminated Sites, Groundwater Remediation, and Hydrostatic Tests*. However, because these limitations were PWJ, they may be made less stringent provided that the basis for change is not newer, minimum effluent guidelines.

18. Special Conditions:

Part I.B. - Additional Total Residual Chlorine and Bacterial Limitations and Monitoring Requirements—Outfall 101 (Sewage Treatment Plant)

Rationale: Required by Sewage Collection and Treatment Regulations, 9VAC25-790 and Water Quality Standards 9VAC25-260-170, Bacteria; Other Recreational Waters. Also, 40 CFR 122.41(e) requires the permittee, at all times, to properly operate and maintain all facilities and systems of treatment in order to comply with the permit. This ensures proper operation of chlorination equipment to maintain adequate disinfection.

Part I.C – Other Requirements or Special Conditions

C.1 - Notification Levels

Rationale: Required by VPDES Permit Regulation, 9 VAC 25-31-200 A for all manufacturing, commercial, mining, and silvicultural dischargers.

C.2 - Materials Handling and Storage

Rationale: 9 VAC 25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia § 62.1-44.16 and 62.1-44.17 authorizes the Board to regulate the discharge of industrial waste or other waste.

C.3 – Licensed Operator Requirement (Sewage Treatment Plant)

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-200 C and the Code of Virginia § 54.1-2300 et seq., Rules and Regulations for Waterworks and Wastewater Works Operators and Onsite Sewage System Professionals(18 VAC 160-20-10 et seq.), require licensure of operators.

C.4 - TMDL/Nutrient Reopener

Rationale: Section 303(d) of the Clean Water Act requires that Total Maximum Daily Loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream. The re-opener recognizes that, according to Section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan, or other wasteload allocation prepared under section 303 of the Act. 9 VAC 25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade. 9 VAC 25-31-390.A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.

C.5 - Operation and Maintenance Manual Requirement

Rationale: Required by Code of Virginia § 62.1-44.16; VPDES Permit Regulation, 9 VAC 25-31-190 E, and 40 CFR 122.41(e). These require proper operation and maintenance of the permitted facility. Compliance with an O & M manual ensures this.

C.6 - Compliance Reporting

Rationale: Authorized by VPDES Permit Regulation, 9 VAC 25-31-190 J 4 and 220 I. This condition is necessary when pollutants are monitored by the permittee and a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion. The condition also established protocols for calculation of reported values. Quantification levels (QLs) for TSS, Oil & Grease, TPH, and TRC are recommended by current agency guidance (GM14-2003, Attachment A, and GM00-2011). The BOD₅ QL of 2 mg/L is consistent with recently adopted VPDES General Permit regulations. The QLs for Copper, Iron, and Zinc are established in accordance with GM14-2003 (IN-3, Pg. 7).

C.7 - Effluent Monitoring Frequencies

Rationale: Permittees are granted a reduction in monitoring frequency based on a history of permit compliance. To remain eligible for the reduction, the permittee should not have violations related to the effluent limits for which reduced frequencies were granted. If permittees fail to maintain the previous level of performance, the baseline monitoring frequencies should be reinstated for those parameters that were previously granted a monitoring frequency reduction.

C.8 - Oil Storage Ground Water Monitoring Reopener

Rationale: Facilities with *less* than 1,000,000 gallons of regulated aboveground petroleum storage are required to provide a means for early leak detection in the event of AST failure, and facilities with *greater* than 1,000,000 gallons of regulated aboveground petroleum storage are required to regularly monitor ground water and submit results to DEQ under the *Facility and Aboveground Storage Tank Regulation* (9 VAC 25-91-10 et seq.) (AST Regulation).

The Surry Power Station stores approximately 278,000 gallons of petroleum product in aboveground storage tanks. Virginia Power has elected to conduct groundwater monitoring in order to fulfill the AST Regulation requirements for early leak detection. If monitoring proves inadequate to properly evaluate potential impacts to ground water, the VPDES permit, under Code of Virginia § 62.1-44.21, can be modified to incorporate appropriate monitoring.

The Gravel Neck Station stores greater than 1,000,000 gallons of petroleum product in aboveground storage tanks, and consequently Virginia Power is required to conduct regular groundwater monitoring in accordance with the AST Regulation. If monitoring proves inadequate to properly evaluate potential impacts to ground

water, the VPDES permit, under Code of Virginia § 62.1-44.21, can be modified to incorporate appropriate monitoring.

C.9 - Tank Bottom Waters and Pump and Haul Activities

Rationale: State Water Control Law §62.1-44.21 authorizes the Board to request information needed to determine possible impacts on State waters. This special condition requires the permittee to report any pump and haul activities regarding the removal of tank bottom waters. The requirement is carried forward from the 1996, 2001, and 2007 permit reissuances and allows DEQ to be kept apprised of tank bottom pump and haul activities.

C.10 - Intake Trash Racks

Rationale: This special condition prohibits the return of debris collected on the intake trash racks to the waterway.

C.11 - No Discharge of PCBs

Rationale: This special condition implements a prohibition against the discharge of polychlorinated biphenyl compounds in accordance with 40 CFR 423.12(b)(2) of the Federal Effluent Guidelines.

C.12 - Discharge of Uncontaminated Water

Rationale: This special condition identifies miscellaneous point source discharges at the power station that should consist only of uncontaminated river water or ground water. As such, effluent limitations and monitoring requirements are not necessary.

C.13 - Discharge of Chlorine in Cooling Water

Rationale: This special condition prohibits the discharge of chlorine from any one power generating unit for more than 2 hours in any one day unless the utility can demonstrate that the unit cannot operate with this restriction. This 2-hour prohibition is in accordance with 40 CFR 423.13(b)(2) of the Federal Effluent Guidelines.

C.14 - Radioactivity Regulated by NRC

Rationale: This special condition recognizes that the Nuclear Regulatory Commission (NRC) is the proper agency to regulate discharges of radioactivity.

C.15 - No Discharge of Tank Bottom Waters

Rationale: This special condition prohibits the discharge of tank bottom waters from bulk fuel oil or waste oil storage facilities. This prohibition is consistent with the regulation of bulk petroleum handling facilities and is applicable to this facility because large quantities of fuel oil are stored. This special condition does not prohibit the discharge of tank bottom waters from highly refined lubricating oil tanks.

C.16 - Water Quality Criteria Reopener

Rationale: VPDES Permit Regulation, 9 VAC 25-31-220 D requires effluent limitations to be established which will contribute to the attainment or maintenance of the water quality standards.

C.17 - Treatment Works Closure Plan

Rationale: Code of Virginia § 62.1-44.16 of the State Water Control Law. This condition establishes the requirement to submit a closure plan for the wastewater treatment facility if the treatment facility is being replaced or is expected to close.

C.18 - 95% Capacity Reopener (Sewage Treatment Plant)

Rationale: Required by VPDES Permit Regulation, 9 VAC 25-31-200 B 4 for all POTW and PVOTW permits.

C.19 - CTC, CTO Requirement (Sewage Treatment Plant)

Rationale: Required by Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790-50. 9VAC 25-40-70.A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade.

C.20 - Reliability Class (Sewage Treatment Plant)

Rationale: Required by Sewage Collection and Treatment Regulations, 9 VAC 25-790 for all municipal facilities.

C.21 - Sludge Reopener (Sewage Treatment Plant)

Rationale: Required by VPDES Permit Regulation 9 VAC 25-31-220 C for all permits issued to treatment works treating domestic sewage.

C.22 - Sludge Use and Disposal (Sewage Treatment Plant)

Rationale: VPDES Permit Regulation, 9 VAC 25-31-100 P; 220 B 2, and 420 through 720; and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on sludge use and disposal practices and to meet specified standards for sludge use and disposal.

C.23 - Monitoring Frequencies Encompassing Multiple Months

Rationale: Clarifies monitoring and reporting schedules.

C.24 - Concept Engineering Report (CER)

Rationale: § 62.1-44.16 of the Code of Virginia requires industrial facilities to obtain DEQ approval for proposed discharges of industrial wastewater. A CER means a document setting forth preliminary concepts or basic information for the design of industrial wastewater treatment facilities and the supporting calculations for sizing the treatment operations. 9VAC 25-40-70.A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade.

C.25 - Whole Effluent Toxicity (WET) Monitoring Program

Rationale: VPDES Permit Regulation, 9 VAC 25-31-210 and 220 I, requires monitoring in the permit to provide for and assure compliance with all applicable requirements of the State Water Control Law and the Clean Water Act. WET testing requirements and language were provided by OWP&CA. Please see **Attachment J** for WET evaluation and the above referenced guidance from OWP&CA.

C.26 – Dredge Sediment Pond Discharge

Rationale: This special condition allows the permittee to discharge water from the sediment management pond to the Intake Canal. DEQ has not objected to this activity in the past on an as needed basis and has not been shown to have an adverse impact on water quality.

C.27 – Beyond Design Basis (BDB) Pumps Testing Discharge

Rationale: This special condition allows the permittee to discharge BDB pumps test water to the Intake Canal and to the Settling Basin (Outfall 108). This activity will use condensate water and is not anticipated to have any adverse impact on water quality as no pollutants are added to the discharge. DEQ has not objected to this activity in the past on an as needed basis.

Part I.D – Stormwater Management Conditions

Rationale: VPDES Permit Regulation, 9 VAC 25-31-10 defines discharges of stormwater from industrial activity. 9 VAC 25-31-120 requires a permit for these discharges. The General Stormwater Special Conditions, Stormwater Pollution Prevention Plan requirements, and Benchmark Monitoring requirements of the permit are derived from the VPDES general permit for discharges of stormwater associated with industrial activity (VAR05), 9 VAC 25-151-10 et seq. VPDES Permit Regulation, 9 VAC 25-31-220 K, requires use of best management practices where applicable to control or abate the discharge of pollutants when numerical effluent limits are infeasible or the practices are necessary to achieve effluent limits or to carry out the purpose and intent of the Clean Water Act and State Water Control Law. General stormwater requirements, SWPPP requirements, and monitoring requirements have been included in accordance with the GM14-2003 Permit Manual, Section IN-4 and in accordance with the VAR05 Industrial Stormwater General Permit (9VAC25-151-10 et seq.). Discharges to Waters Subject to TMDL Wasteload Allocations have been included in accordance with VAR05 Industrial Stormwater General Permit (9VAC25-151-10 et seq.).

Sector-specific stormwater language for Sector O “Steam Electric Generating Facilities” has been omitted from the Part I.D special condition language for consistency with VPDES permitting language at the North Anna Nuclear Facility, which has similar stormwater outfalls. The stormwater discharges from the Surry Nuclear Power Plant have little to no industrial activity taking place near the outfalls and instead capture runoff from laydown areas, roof drainage, and parking lots. Therefore, general stormwater special conditions and SWPPP requirements are sufficient to ensure the quality of stormwater runoff. However, benchmark monitoring for Sector O has been included because the discharge from these outfalls has not yet been characterized.

Part I. E - §316(b) Phase II Conditions

E.1 - Interim §316(b) Best Technology Available (BTA)

VPDES Permit Regulation 9VAC25-31-165.C requires existing facilities with cooling water intake structures to meet the requirements under §316(b) of the Clean Water Act (CWA) determined by the department on a case-by-case, best professional judgment basis. DEQ staff have determined the permitted facility to be subject to the §316(b) requirements because it is a point source that uses or proposes to use one or more cooling water intake structures that withdraws waters of the U.S. for cooling purposes.

Federal regulations at 40 CFR §§125.98(b)(5) and (b)(6) mandate that for permits issued before July 14, 2018, for which an alternate schedule has been established for the submission of information required by 40 CFR §122.21(r), must include interim BTA requirements in the permit based on best professional judgment on a site-specific basis. This special condition outlines interim BTA practices to minimize impingement and entrainment (I&E) mortality and adverse impacts to aquatic organisms.

The permittee conducted an entrainment characterization study in 2005-2006. The results of the study along with details of the CWIS were published in the *Entrainment Characterization Report, Surry Power Station, June 2005-May 2006* in August 2007 (See **Attachment K**). The report described the Ristroph traveling screens, low-pressure wash system, and fish return system used to reduced impingement mortality at the CWIS. This report was used to determine interim BTA for the facility.

E.2 - Impingement and Entrainment Control Technology Preventative Maintenance

VPDES Permit Regulation 9VAC25-31-190.E requires the permittee, at all times, to properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit.

E.3 - Alternate Schedule for Submittal of 40 CFR §122.21(r) Information

VPDES Permit Regulation 9VAC25-31-165.C requires existing facilities with cooling water intake structures to meet the requirements under §316(b) of the Clean Water Act (CWA) determined by the department on a case-by-case, best professional judgment (BPJ) basis. Federal regulations at 40 CFR §125.95(a)(2) allow for owners or operators of a facility whose permit expires prior to July 14, 2018 to request the Director establish an alternate schedule for the submission of the information required in 40 CFR §122.21(r) when making application for this permit. If the owner or operator of the facility demonstrates that it could not develop the required information by the applicable date of submission, DEQ must establish an alternate schedule for the submission of the required information.

DEQ staff received a written request from the permittee, dated April 24, 2015, requesting an alternate schedule (see **Attachment K**). Upon review of the request, DEQ staff determined the permittee successfully demonstrated the inability to reasonably develop the required information by their reissuance application due date, thereby qualifying for an alternate schedule to be established.

Federal regulations at 40 CFR §125.98(a) requires the review, for completeness, of the materials submitted by the applicant under 40 CFR §122.21(r) at the time of any application for a subsequent permit. To facilitate a determination of a timely and complete reissuance application in compliance with Part II.M of this permit, the Alternate Schedule for this facility has been established to require submission of the 40 CFR §122.21(r) information to the DEQ-Regional Office by no later than 270 days prior to the expiration date of this permit.

E.4 - Monitoring Requirements

VPDES Permit Regulation 9VAC25-31-210.A authorizes the Board to establish permit conditions to provide for and assure compliance with all applicable requirements of the law, the CWA and regulations. Federal regulations at 40 CFR §125.96(e) requires visual inspections or the employment of remote monitoring devices to be conducted at least weekly during the period any cooling water intake structure is in operation to ensure any technologies operated are maintained and operated to function as designed, including those installed to protect Federally-listed threatened or endangered species or designated critical habitat.

40 CFR §125.96 authorizes DEQ to establish monitoring requirements, and specific protocols, as appropriate. Provisions for inspection waivers, adverse weather conditions, and deficiency discoveries were developed, using as a foundation, comparable provisions found in the VPDES General Permit for Stormwater Discharges Associated with Industrial Activity, 9 VAC 25-151-70, Part I.A.2.e, A.3. and A.6.b.

E.5 – Annual Certification Statement Requirements

VPDES Permit Regulation 9VAC25-31-210.A authorizes the Board to establish permit conditions to provide for and assure compliance with all applicable requirements of the law, the CWA and regulations. Federal regulations at 40 CFR §125.97(c) requires the permittee to annually submit a certification statement signed by a responsible corporate officer reporting whether there have been substantial modifications to the operation at any unit at the facility that impacts cooling water withdrawals or operation of the cooling water intake structures, or if information contained in the previous year's annual certification remains pertinent.

E.6 - Measures to Protect Federally-listed Threatened or Endangered (T&E) Species, Designated Critical Habitat, and Fragile Species or Shellfish

VPDES Permit Regulation 9VAC25-31-330 authorizes the board to include conditions in the permit in response to advice submitted in writing to the DEQ from the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, or any other state or federal agency with jurisdiction over fish, wildlife, or public health that the imposition of specified conditions are necessary to avoid substantial impairment of fish, shellfish, or wildlife resources and to the extent the board determines the conditions are necessary to carry out the provisions of the regulation, the law and of the CWA.

In addition, VPDES Permit Regulation 9VAC25-31-165.C requires existing facilities with cooling water intake structures to meet requirements under section 316(b) of the Clean Water Act determined by the department on a case-by-case, best professional judgment (BPJ) basis. 40 CFR §§125.94(a)(1), 125.94(g), 125.96(g), and 125.97(g) authorize DEQ to establish additional control measures, monitoring, and reporting requirements in the permit designed to minimize incidental take, reduce or remove more than minor detrimental effects to Federally-listed threatened or endangered species or designated critical habitat, or avoid jeopardizing Federally-listed species or destroying or adversely modifying designated critical habitat (e.g. prey base).

State Water Control Law §62.1-44.5.A.3 and VPDES Permit Regulation 9VAC25-31-50.A.2 prohibits the alteration of the physical, chemical or biological properties of State waters and making them detrimental to animal or aquatic life, except in compliance with a permit issued by the Board. In addition, VPDES Permit Regulation 9VAC25-31-190.E requires the permittee, at all times, to properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit.

State Water Control Law §62.1-44.21 and VPDES Permit Regulation 9VAC25-31-190.H authorizes the Board to require owners to furnish plans, specifications, and other pertinent information as may be necessary to accomplish the purposes of the State Water Control Law. In addition, federal regulations at 40 CFR §125.94(g) and §125.97(e) authorize DEQ to establish additional permit monitoring and reporting requirements. Information provided by the permittee under this special condition may be used as a foundation to address other reporting requirements of 40 CFR §125.98(k).

E.7 - Federal Endangered Species Act Compliance

State Water Control Law §62.1-44.5.A.3 and VPDES Permit Regulation 9VAC25-31-50.A.2 prohibits the alteration of the physical, chemical or biological properties of State waters and making them detrimental to animal or aquatic life, except in compliance with a permit issued by the Board.

In addition, VPDES Permit Regulation 9VAC25-31-210.A authorizes the Board to establish permit conditions to provide for and assure compliance with all applicable requirements of the law, the CWA and regulations. 40 CFR §125.98(j) stipulates that nothing in Subpart J of Part 125 of the Code of Federal Regulations authorizes the take, as defined at 16 U.S.C. 1532(19), of threatened or endangered species of fish or wildlife. Such take is prohibited under the Endangered Species Act unless it is exempted pursuant to 16 U.S.C 1536(o) or permitted pursuant to 16 U.S.C 1539(a). Absent such exemption or permit, any facility must not take threatened or endangered species. 40 CFR §125.98(b)(1) requires all NPDES permits for facilities subject to §316(b) of the Clean Water Act to include as a permit condition the specific language of this special condition.

Part II, Conditions Applicable to All Permits

Rationale: VPDES Permit Regulation, 9 VAC 25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed.

20. Changes to Permit:

| EFFLUENT CHARACT. | Outfall 001 – Changes to Limitations and Monitoring Requirements | | | | | | | | | | | | Reason for Change |
|--------------------------------------|--------------------------------------------------------------------------|-----------|-----|-------|--------------|----------|--------------------------------------------------------------------------|-----------|-----|-------|----------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | 2008 Permit Modification Limitations & Monitoring | | | | | | 2015 Permit Limitations & Monitoring | | | | | | |
| | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | |
| | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPL | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPLE | |
| Flow (MGD) | NL | NA | NA | NL | Continuous | Recorded | NL | NA | NA | NL | Continuous | Recorded | No Changes |
| pH (Standard Units) | NA | NA | 6.0 | 9.0 | 2 / Month | Grab | NA | NA | 6.0 | 9.0 | 2 per Month | Grab | |
| Total Residual Chlorine (mg/L) | 0.011 | NA | NA | 0.023 | 1 / Day | Grab | 0.0080 | NA | NA | 0.016 | 1 per Day | Grab | The TRC limitation is more stringent due to WLAs for chlorine producing oxidants being used in lieu of TRC WLAs in the limitation evaluation. See Item 16 for further information |
| Heat Rejected (BTU/HR) | Heat rejected shall not exceed a daily maximum of 12.6 x 10 ⁹ | | | | Continuous | Recorded | Heat rejected shall not exceed a daily maximum of 12.6 x 10 ⁹ | | | | Continuous | Recorded | No Changes |
| Intake pH (Standard Units) | NA | NA | NL | NL | 2 / Month | Grab | NA | NA | NL | NL | 2 per Month | Grab | |
| Intake Total Suspended Solids (mg/L) | NL | NA | NA | NL | 1 / 6 Months | Grab | NL | NA | NA | NL | 1 per 6 Months | Grab | No changes |
| Thallium, total (µg/L) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per Year | Grab | Monitoring only added. See item 16 of this fact sheet for further information. |
| Total Phosphorus (mg/L) | 2.0 | NA | NA | NL | 1 / Year | Grab | -- | -- | -- | -- | -- | -- | Limitation removed. See Item 17 of this fact sheet for further information. |

| Outfall 101 – Changes to Limitations and Monitoring Requirements | | | |
|------------------------------------------------------------------|--|--------------------------------------|-------------------|
| 2008 Permit Modification Limitations & Monitoring | | 2015 Permit Limitations & Monitoring | Reason for Change |

| EFFLUENT CHARACT. | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | |
|--------------------------------|-----------------------|-----------|-----|-----|----------------------------|----------|-----------------------|-----------|-----|-----|-------------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------|
| | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPL | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPLE | |
| Flow (MGD) | NL | NA | NA | NL | Continuous | Recorded | NL | NA | NA | NL | Continuous | Recorded | No Changes |
| pH (Standard Units) | NA | NA | 6.0 | 9.0 | 1 / Day | Grab | NA | NA | 6.0 | 9.0 | 1 per Day | Grab | |
| BOD ₅ (mg/L) | 30 | NA | NA | 45 | 1 / Week | 4 HC | 30 | NA | NA | 45 | 1 per 2 Months | 4 HC | Monitoring frequency reduction granted in accordance with GM14-2003 (IN-2, Pgs.51-52) |
| Total Suspended Solids (mg/L) | 30 | NA | NA | 45 | 1 / Month | 4 HC | 30 | NA | NA | 45 | 1 per 6 Months | 4 HC | |
| Total Residual Chlorine (mg/L) | NA | NA | NA | NA | 3 / Day at 4 Hr. Intervals | Grab | Removed | | | | | | TRC monitoring and limitations are explained in Part I.B of the 2015 permit. This line item is unnecessary and redundant |
| Fecal coliform (n/100 mL) | 200 geometric mean | NA | NA | NA | 1 / Week | Grab | 200 geometric mean | NA | NA | NA | 4 Days per Month (between 10 a.m. and 4 p.m.) once per year | Grab | Monitoring frequency changed to match recommended reduced frequency in GM14-2003 (MN-2, Pg.2) when chlorine disinfection is used. |
| Enterococci (n/100 mL) | -- | -- | -- | -- | -- | -- | 35 geometric mean | NA | NA | NA | 4 Days per Month (between 10 a.m. and 4 p.m.) once per year | Grab | See Item 16 of this fact sheet for information regarding the addition of this limitation to the 2015 permit. |
| Total Phosphorus (mg/L) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per Year | Grab | See Item 16 of this fact sheet for information regarding the addition of this limitation to the 2015 permit. |

| | Outfall 101 – Changes to Limitations and Monitoring Requirements | | | | | | | | | | | | |
|-----------------------------------|------------------------------------------------------------------|-----------|-----|-----|------------|-------|--------------------------------------|-----------|-----|-----|------------|------------|-----------------------------------------------------------------------------------------------------------------------------|
| | 2008 Permit Modification Limitations & Monitoring | | | | | | 2015 Permit Limitations & Monitoring | | | | | | Reason for Change |
| EFFLUENT CHARACT. | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | |
| | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPL | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPLE | |
| Total Kjeldahl Nitrogen (mg/L) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per Year | Grab | See Item 16 of this fact sheet for information regarding the addition of this limitation to the 2015 permit. |
| Nitrite + Nitrate (mg/L) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per Year | Grab | See Item 16 of this fact sheet for information regarding the addition of this limitation to the 2015 permit. |
| Total Nitrogen (mg/L) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per Year | Calculated | See Item 16 of this fact sheet for information regarding the addition of this limitation to the 2015 permit. |

| EFFLUENT CHARACT. | | Outfalls 102, 103, 106 – Changes to Limitations and Monitoring Requirements | | | | | | | | | | | | Reason for Change |
|----------------------------------------------------|-----------|-----------------------------------------------------------------------------|-----|------|-----------------|------------|-----------|--------------------------------------|-----|------|-------------------|------------|------------|-------------------|
| | | 2008 Permit Modification Limitations & Monitoring | | | | | | 2015 Permit Limitations & Monitoring | | | | | | |
| | | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | |
| MO AVG | WE AVG | MIN | MAX | FREQ | SAMPL | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPLE | | | |
| Flow (MGD) | NL | NA | NA | NL | 1 / 6 Months | Estimate | NL | NA | NA | NL | 1 per 6 Months | Estimate | No Changes | |
| pH (Standard Units) | NA | NA | NL | NL | 1 / 6 Months | Grab | NA | NA | NL | NL | 1 per 6 Months | Grab | | |
| Total Suspended Solids – Net Increase (mg/L) | 30 | NA | NA | 100 | 1 / 6 Months | Grab | 30 | NA | NA | 100 | 1 per 6 Months | Grab | | |
| Oil and Grease (mg/L) | 15 | NA | NA | 20 | 1 / 6 Months | Grab | 15 | NA | NA | 20 | 1 per 6 Months | Grab | | |

| EFFLUENT CHARACT. | Outfalls 102, 103, 106 – Changes to Limitations and Monitoring Requirements | | | | | | | | | | | | |
|-----------------------------------|-----------------------------------------------------------------------------|-----|-----|------|------------|-----------|--------------------------------------|-----|-----|------|------------|------------|-----------------------------------------------------------------------------------------------------------------------------|
| | 2008 Permit Modification Limitations & Monitoring | | | | | | 2015 Permit Limitations & Monitoring | | | | | | Reason for Change |
| | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | |
| MO AVG | WE AVG | MIN | MAX | FREQ | SAMPL | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPLE | | |
| Total Phosphorus (mg/L) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per Year | Grab | See Item 16 of this fact sheet for information regarding the addition of this limitation to the 2015 permit. |
| Total Kjeldahl Nitrogen (mg/L) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per Year | Grab | See Item 16 of this fact sheet for information regarding the addition of this limitation to the 2015 permit. |
| Nitrite + Nitrate (mg/L) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per Year | Grab | See Item 16 of this fact sheet for information regarding the addition of this limitation to the 2015 permit. |
| Total Nitrogen (mg/L) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per Year | Calculated | See Item 16 of this fact sheet for information regarding the addition of this limitation to the 2015 permit. |

| | | Outfalls 104, 107, 109, 110, 111, 112, 113, 114, 115, 119, 120, 121, 122 – Changes to Limitations and Monitoring Requirements | | | | | | | | | | | | |
|----------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----------------|----------|--------------------------------------|-----------|-----|-----|-------------------|-------------------|------------|--------|
| | | 2008 Permit Modification Limitations & Monitoring | | | | | 2015 Permit Limitations & Monitoring | | | | | Reason for Change | | |
| EFFLUENT CHARACT. | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | | |
| | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPL | MO AVG | WE AVG | MIN | MAX | FREQ | | | SAMPLE |
| Flow (MGD) | NL | NA | NA | NL | 1 / 6 Months | Estimate | NL | NA | NA | NL | 1 per 6 Months | Estimate | No Changes | |

| | Outfalls 104, 107, 109, 110, 111, 112, 113, 114, 115, 119, 120, 121, 122 – Changes to Limitations and Monitoring Requirements | | | | | | | | | | | | |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------|-----|-----|-----------------|-------|--------------------------------------|-----------|-----|-----|-------------------|------------|-----------------------------------------------------------------------------------------------------------------------------|
| | 2008 Permit Modification Limitations & Monitoring | | | | | | 2015 Permit Limitations & Monitoring | | | | | | Reason for Change |
| EFFLUENT CHARACT. | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | |
| | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPL | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPLE | |
| pH (Standard Units) | NA | NA | NL | NL | 1 / 6 Months | Grab | NA | NA | NL | NL | 1 per 6 Months | Grab | |
| Total Suspended Solids (mg/L) | 30 | NA | NA | 100 | 1 / 6 Months | Grab | 30 | NA | NA | 100 | 1 per 6 Months | Grab | |
| Oil and Grease (mg/L) | 15 | NA | NA | 20 | 1 / 6 Months | Grab | 15 | NA | NA | 20 | 1 per 6 Months | Grab | |
| Total Phosphorus (mg/L) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per Year | Grab | See Item 16 of this fact sheet for information regarding the addition of this limitation to the 2015 permit. |
| Total Kjeldahl Nitrogen (mg/L) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per Year | Grab | See Item 16 of this fact sheet for information regarding the addition of this limitation to the 2015 permit. |
| Nitrite + Nitrate (mg/L) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per Year | Grab | See Item 16 of this fact sheet for information regarding the addition of this limitation to the 2015 permit. |
| Total Nitrogen (mg/L) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per Year | Calculated | See Item 16 of this fact sheet for information regarding the addition of this limitation to the 2015 permit. |

| EFFLUENT CHARACT. | Outfall 105 – Changes to Limitations and Monitoring Requirements | | | | | | | | | | | | Reason for Change |
|-------------------------------------------------|------------------------------------------------------------------|-----------|-----|-----|-----------------|----------|--------------------------------------|-----------|-----|-----|-------------------|----------|-----------------------------------------------------------------------------------------------------------------------------|
| | 2008 Permit Modification Limitations & Monitoring | | | | | | 2015 Permit Limitations & Monitoring | | | | | | |
| | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | |
| | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPL | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPLE | |
| Flow (MGD) | NL | NA | NA | NL | 1 / 6 Months | Estimate | NL | NA | NA | NL | 1 per 6 Months | Estimate | No changes. |
| pH (Standard Units) | NA | NA | NL | NL | 1 / 6 Months | Grab | NA | NA | NL | NL | 1 per 6 Months | Grab | |
| Total Suspended Solids (mg/L) | 30 | NA | NA | 100 | 1 / 6 Months | Grab | 30 | NA | NA | 100 | 1 per 6 Months | Grab | |
| Total Petroleum Hydrocarbons (TPH) (mg/L) | NL | NA | NA | NA | 1 / Year | Grab | NL | NA | NA | NA | 1 per 6 Months | Grab | |
| Oil and Grease (mg/L) | 15 | NA | NA | 20 | 1 / 6 Months | Grab | 15 | NA | NA | 20 | 1 per 6 Months | Grab | |
| Total Phosphorus (mg/L) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per Year | Grab | See Item 16 of this fact sheet for information regarding the addition of this limitation to the 2015 permit. |
| Total Kjeldahl Nitrogen (mg/L) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per Year | Grab | See Item 16 of this fact sheet for information regarding the addition of this limitation to the 2015 permit. |

| EFFLUENT CHARACT. | | Outfall 105 – Changes to Limitations and Monitoring Requirements | | | | | | | | | | | | Reason for Change |
|-----------------------------|-----------|------------------------------------------------------------------|-----|------|-------|------------|--------------------------------------|-----------------------|-----|------|------------|------------|-----------------------------------------------------------------------------------------------------------------------------|-------------------|
| | | 2008 Permit Modification Limitations & Monitoring | | | | | 2015 Permit Limitations & Monitoring | | | | | | | |
| | | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | |
| MO AVG | WE AVG | MIN | MAX | FREQ | SAMPL | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPLE | | | |
| Nitrite + Nitrate (mg/L) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per Year | Grab | See Item 16 of this fact sheet for information regarding the addition of this limitation to the 2015 permit. | |
| Total Nitrogen (mg/L) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per Year | Calculated | See Item 16 of this fact sheet for information regarding the addition of this limitation to the 2015 permit. | |

| EFFLUENT CHARACT. | | Outfall 108 – Changes to Limitations and Monitoring Requirements | | | | | | | | | | | | Reason for Change |
|-------------------------------------------|-----------|------------------------------------------------------------------|-----|------|--------------|------------|-----------|--------------------------------------|-----|------|----------------|------------|-------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| | | 2008 Permit Modification Limitations & Monitoring | | | | | | 2015 Permit Limitations & Monitoring | | | | | | |
| | | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | |
| MO AVG | WE AVG | MIN | MAX | FREQ | SAMPL | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPLE | | | |
| Flow (MGD) | NL | NA | NA | NL | 1 / Month | Measured | NL | NA | NA | NL | 1 per 3 Months | Estimate | Effluent monitoring frequencies changed to address the intermittent nature of the discharge. See item 23.b for further explanation. | |
| pH (Standard Units) | NA | NA | NL | NL | 1 / Month | Grab | NA | NA | NL | NL | 1 per 3 Months | Grab | | |
| Total Suspended Solids (mg/L) | 30 | NA | NA | 100 | 1 / Month | Grab | 30 | NA | NA | 100 | 1 per 3 Months | Grab | | |
| Total Organic Carbon (mg/L) | NA | NA | NA | 110 | 1 / 6 Months | Grab | NA | NA | NA | 110 | 1 per 6 Months | Grab | | |
| Total Petroleum Hydrocarbons (TPH) (mg/L) | NL | NA | NA | NA | 1 / Year | Grab | NL | NA | NA | NA | 1 per Year | Grab | | |
| Oil and Grease (mg/L) | 15 | NA | NA | 20 | 1 / Month | Grab | 15 | NA | NA | 20 | 1 per 3 Months | Grab | | |

| | Outfall 108 – Changes to Limitations and Monitoring Requirements | | | | | | | | | | | | |
|-----------------------------------|------------------------------------------------------------------|-----------|-----|-----|------------|-------|--------------------------------------|-----------|-----|-----|------------|------------|--------------------------------------------------------------------------------------------------------------|
| | 2008 Permit Modification Limitations & Monitoring | | | | | | 2015 Permit Limitations & Monitoring | | | | | | Reason for Change |
| EFFLUENT CHARACT. | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | |
| | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPL | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPLE | |
| Total Phosphorus (mg/L) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per Year | Grab | See Item 16 of this fact sheet for information regarding the addition of this limitation to the 2015 permit. |
| Total Kjeldahl Nitrogen (mg/L) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per Year | Grab | See Item 16 of this fact sheet for information regarding the addition of this limitation to the 2015 permit. |
| Nitrite + Nitrate (mg/L) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per Year | Grab | See Item 16 of this fact sheet for information regarding the addition of this limitation to the 2015 permit. |
| Total Nitrogen (mg/L) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per Year | Calculated | See Item 16 of this fact sheet for information regarding the addition of this limitation to the 2015 permit. |

| Outfalls 116, 117 – Changes to Limitations and Monitoring Requirements | | | | | |
|------------------------------------------------------------------------|---------------------------------------------------|--|------------|--------------------------------------|-------------------|
| EFFLUENT | 2008 Permit Modification Limitations & Monitoring | | | 2015 Permit Limitations & Monitoring | |
| | DISCHARGE LIMITATIONS | | MON. REQ'S | DISCHARGE LIMITATIONS | MON. REQ'S |
| | | | | | Reason for Change |

| CHARACT. | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPL | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPLE | |
|----------------------------------------------------|-----------|-----------|-----|-----|-----------------|----------|-----------|-----------|-----|-----|-------------------|----------|------------|
| Flow (MGD) | NL | NA | NA | NL | 1 / 6 Months | Estimate | NL | NA | NA | NL | 1 per 6 Months | Estimate | No Changes |
| pH (Standard Units) | NA | NA | NL | NL | 1 / 6 Months | Grab | NA | NA | NL | NL | 1 per 6 Months | Grab | |
| Total Suspended Solids – Net Increase (mg/L) | 30 | NA | NA | 100 | 1 / 6 Months | Grab | 30 | NA | NA | 100 | 1 per 6 Months | Grab | |
| Oil and Grease (mg/L) | 15 | NA | NA | 20 | 1 / 6 Months | Grab | 15 | NA | NA | 20 | 1 per 6 Months | Grab | |

| EFFLUENT CHARACT. | Outfall 002 – Changes to Limitations and Monitoring Requirements | | | | | | | | | | | | |
|----------------------------------|------------------------------------------------------------------|-----------|-----|-----|-----------------|----------|--------------------------------------|-----------|-----|-----|-------------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| | 2008 Permit Modification Limitations & Monitoring | | | | | | 2015 Permit Limitations & Monitoring | | | | | | Reason for Change |
| | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | |
| | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPL | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPLE | |
| Flow (MGD) | NL | NA | NA | NL | 1 / 6 Month | Measured | NL | NA | NA | NL | 1 per 6 Months | Estimate | See Item 16 for comparison of these parameters against screening criteria and benchmarks. |
| pH (Standard Units) | NA | NA | NL | NL | 1 / 6 Month | Grab | Removed | | | | | | |
| Total Suspended Solids (mg/L) | 30 | NA | NA | 100 | 1 / 6 Month | Grab | NL | NA | NA | NL | 1 per 6 Months | Grab | Monitoring added in accordance with ISWGP ((9VAC25- 151-10 et seq.) for facilities discharging to the Chesapeake Bay watershed. |
| Total Organic Carbon (mg/L) | NA | NA | NA | 110 | 1 / 6 Months | Grab | NA | NA | NA | NL | 1 per 6 Months | Grab | See Item 16 for comparison of these parameters against screening criteria and benchmarks. |

| EFFLUENT CHARACT. | Outfall 002 – Changes to Limitations and Monitoring Requirements | | | | | | | | | | | | | Reason for Change |
|-------------------------------------------|------------------------------------------------------------------|-----------|-----|-----|--------------|-------|--------------------------------------|-----------|-----|-----|----------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| | 2008 Permit Modification Limitations & Monitoring | | | | | | 2015 Permit Limitations & Monitoring | | | | | | | |
| | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | | |
| | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPL | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPLE | | |
| Total Petroleum Hydrocarbons (TPH) (mg/L) | NL | NA | NA | NA | 1 / Year | Grab | Removed | | | | | | | |
| Copper, Dissolved (µg/L) | NL | NA | NA | NL | 1 / 6 Months | Grab | NL | NA | NA | NL | 1 per 6 Months | Grab | Monitoring was changed to the dissolved portion of the concentrations for copper and zinc. These parameters shall be monitored in accordance with Part I.D. | |
| Zinc, Dissolved (µg/L) | NL | NA | NA | NL | 1 / 6 Months | Grab | NL | NA | NA | NL | 1 per 6 Months | Grab | | |
| PCB 1260 (µg/L) | NL | NA | NA | NL | 1 / 5 years | Grab | -- | -- | -- | -- | -- | -- | PCB monitoring first appeared in the 2007 permit because effluent screening data submitted by the permittee reflected PCB concentrations less than a QL that was greater than the DEQ-required QL at the time. The permittee subsequently submitted acceptable PCB monitoring data to fulfill this permit requirement on 4/10/2007, and therefore, it has been removed from | |
| PCB 1242 (µg/L) | NL | NA | NA | NL | 1 / 5 years | Grab | -- | -- | -- | -- | -- | -- | | |
| PCB 1254 (µg/L) | NL | NA | NA | NL | 1 / 5 years | Grab | -- | -- | -- | -- | -- | -- | | |
| PCB 1221 (µg/L) | NL | NA | NA | NL | 1 / 5 years | Grab | -- | -- | -- | -- | -- | -- | | |
| PCB 1232 (µg/L) | NL | NA | NA | NL | 1 / 5 years | Grab | -- | -- | -- | -- | -- | -- | | |
| PCB 1248 (µg/L) | NL | NA | NA | NL | 1 / 5 years | Grab | -- | -- | -- | -- | -- | -- | | |
| PCB 1016 (µg/L) | NL | NA | NA | NL | 1 / 5 years | Grab | -- | -- | -- | -- | -- | -- | | |

| | Outfall 002 – Changes to Limitations and Monitoring Requirements | | | | | | | | | | | | Reason for Change |
|-------------------------------|------------------------------------------------------------------|-----------|-----|-----|------------|-------|--------------------------------------|-----------|-----|-----|----------------|------------|--------------------------------------------------------------------------------------------------------------------------------|
| | 2008 Permit Modification Limitations & Monitoring | | | | | | 2015 Permit Limitations & Monitoring | | | | | | |
| EFFLUENT CHARACT. | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | |
| | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPL | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPLE | |
| | | | | | | | | | | | | | the 2015 permit. |
| Total Phosphorous (TP) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per 6 Months | Grab | Monitoring added in accordance with ISWGP ((9VAC25-151-10 et seq.) for facilities discharging to the Chesapeake Bay watershed. |
| Total Kjeldahl Nitrogen (TKN) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per 6 Months | Grab | |
| Nitrite+Nitrate | -- | -- | -- | -- | -- | | NL | NA | NA | NL | 1 per 6 Months | Grab | |
| Total Nitrogen (TN) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per 6 Months | Calculated | Monitoring added in accordance with ISWGP ((9VAC25-151-10 et seq.) for facilities discharging to the Chesapeake Bay watershed. |

| | Outfalls 050, 051, 052, 053 – Changes to Limitations and Monitoring Requirements | | | | | | | | | | | | |
|----------------------|----------------------------------------------------------------------------------|-----------|-----|-----|------------|-------|--------------------------------------|-----------|-----|-----|-------------------|----------|----------------------------------------------------|
| | 2008 Permit Modification Limitations & Monitoring | | | | | | 2015 Permit Limitations & Monitoring | | | | | | Reason for Change |
| EFFLUENT CHARACT. | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | |
| | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPL | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPLE | |
| Flow (MGD) | -- | -- | -- | -- | -- | -- | NA | NA | NA | NL | 1 per 6 Months | Estimate | Analytical monitoring for Sector O benchmark |

| | Outfalls 050, 051, 052, 053 – Changes to Limitations and Monitoring Requirements | | | | | | | | | | | | |
|-------------------------------|----------------------------------------------------------------------------------|-----------|-----|-----|------------|-------|--------------------------------------|-----------|-----|-----|-----------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | 2008 Permit Modification Limitations & Monitoring | | | | | | 2015 Permit Limitations & Monitoring | | | | | | Reason for Change |
| EFFLUENT CHARACT. | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | DISCHARGE LIMITATIONS | | | | MON. REQ'S | | |
| | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPL | MO AVG | WE AVG | MIN | MAX | FREQ | SAMPLE | |
| Iron, total (mg/L) | -- | -- | -- | -- | -- | -- | NA | NA | NA | NL | 1 per 6 Months | Grab | parameters added due to the addition of stormwater requirements in the 2015 permit. GM14-2003 states that analytical monitoring be performed semi-annually. |
| Total Phosphorous (TP) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per 6 Months (d)(e) | Grab | Monitoring added in accordance with ISWGP ((9VAC25-151-10 et seq.) for facilities discharging to the Chesapeake Bay watershed. |
| Total Kjeldahl Nitrogen (TKN) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per 6 Months | Grab | |
| Nitrite+Nitrate | -- | -- | -- | -- | -- | | NL | NA | NA | NL | 1 per 6 Months | Grab | Monitoring added in accordance with ISWGP ((9VAC25-151-10 et seq.) for facilities discharging to the Chesapeake Bay watershed. |
| Total Nitrogen (TN) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per 6 Months | Calculated | |
| Total Suspended Solids (mg/L) | -- | -- | -- | -- | -- | -- | NL | NA | NA | NL | 1 per 6 Months | Grab | |

| Changes to Special Conditions and Other Changes | | | |
|-------------------------------------------------|---------------|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| From | To | Special Condition Changed | Rationale |
| Cover Page | Cover Page | -- | The structure and language of the cover page have been modified in accordance with new agency procedures and for streamlining purposes. Signatory requirements have also changed in accordance with the October 2008 DEQ Agency Policy Statement 2-09, "Delegations of Authority". The facility name and locations have been revised to match those provided in the 2011 permit application. The authorization to discharge stormwater from Outfalls 050, 051, 052, and 053 was added at the permittee's request. |
| Part I.A.1 & Part I.A.1.a | Part I.A.1 | Limitations & Monitoring Page Preamble | Structure and language revised and combined for acuity and streamlining purposes. |
| -- | Part I.A.1(a) | Monitoring Frequencies Encompassing Multiple Months | New, added to clarify expected monitoring schedule. |
| Part I.A.1.a(1) | Part I.A.1(b) | Cooling Pump Operation Equivalent to Flow | No Change. |
| Part I.A.1.a(2) | Part I.A.1(c) | Maintain pH within 0.5 SU of Intake pH | Revised wording for acuity purposes. |
| Part I.A.1.a(3) | Part I.A.1(d) | Compliance Reporting Reference | No Change. |
| Part I.A.1.a(4) | Part I.A.1(e) | TRC Sampling Coincide with Addition | Revised wording for acuity purposes. |
| Part I.A.1.a(5) | Part I.A.1(f) | TSS and pH Intake Sampling | Revised wording for acuity purposes. |
| Part I.A.2 & Part I.A.2.a | Part I.A.2 | Limitations & Monitoring Preamble. | Structure and language revised and combined for acuity and streamlining purposes. |
| Part I.A.2.a(1) | Part I.A.2(a) | Design Flow | Added reference to 95% Capacity Reopener special condition for clarity. |
| -- | Part I.A.2(b) | Effluent Monitoring Frequencies | Added to make reference to reduced monitoring frequency special condition. |
| Part I.A.2.a(2) | Part I.A.2(c) | Significant Figures | Wording revised for clarity. |
| -- | Part I.A.2(d) | Monitoring Frequencies Encompassing Multiple Months | New, added to clarify expected monitoring schedule. |
| Part I.A.2.a(3) | Part I.A.2(e) | Additional TRC Requirements Reference | Spelled out TRC acronym for acuity purposes. |
| Part I.A.2.a(4) | Part I.A.2(f) | 4 Days per Month Monitoring Frequency Clarification | Wording revised to clarify expected monitoring schedule. |
| -- | Part I.A.2(g) | Total Nitrogen | New, added to define total nitrogen for reporting purposes. |
| Part I.A.2.b | Part I.A.3 | 85% Removal | No Change. |
| Part I.A.3 | Part I.A.4 | Limitations & Monitoring Page Preamble | Structure and language revised and combined for acuity and streamlining purposes. |
| Part I.A.3(1) | Part I.A.4(a) | Effluent Monitoring Frequencies | No Change. |
| -- | Part I.A.4(b) | Monitoring Frequencies Encompassing Multiple Months | New, added to clarify expected monitoring schedule. |
| -- | Part I.A.4(c) | Net Increase for TSS | New, added to clarify net increase of TSS for compliance purposes. |
| -- | Part I.A.4(d) | Compliance Reporting | New, added to clarify quantification levels for compliance monitoring. |
| Part I.A.3(2) | Part I.A.4(e) | Significant Figures | Wording revised for clarity. |
| -- | Part I.A.4(f) | Total Nitrogen | New, added to define total nitrogen for reporting purposes. |

| Changes to Special Conditions and Other Changes | | | |
|-------------------------------------------------|---------------|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| From | To | Special Condition Changed | Rationale |
| Part I.A.4 | Part I.A.5 | Limitations & Monitoring Page Preamble | Structure and language revised and combined for acuity and streamlining purposes. |
| Part I.A.4(1) | Part I.A.5(a) | Effluent Monitoring Frequencies | No Change. |
| -- | Part I.A.5(b) | Monitoring Frequencies Encompassing Multiple Months | New, added to clarify expected monitoring schedule. |
| Part I.A.4(2) | Part I.A.5(c) | Significant Figures | Wording revised for clarity. |
| -- | Part I.A.5(d) | Compliance Reporting | New, added to clarify quantification levels for compliance monitoring. |
| -- | Part I.A.5(e) | Total Nitrogen | New, added to define total nitrogen for reporting purposes. |
| Part I.A.5 | Part I.A.6 | Limitations & Monitoring Page Preamble | Structure and language revised and combined for acuity and streamlining purposes. |
| -- | Part I.A.6(a) | Sampling and Reporting Requirements | The intermittent discharge frequency from these outfalls may prevent a sampling event from occurring on a minimum basis of once per 6 months. Therefore further sampling instructions have been added via this footnote for monitoring periods in which no discharge occurs in order that the permittee remains consistent with previous sampling practices and current agency policy. |
| -- | Part I.A.6(b) | Monitoring Frequencies Encompassing Multiple Months | New, added to clarify expected monitoring schedule. |
| Part I.A.5(2) | Part I.A.6(c) | Significant Figures | Wording revised for clarity. |
| -- | Part I.A.6(d) | TPH Test Method Requirements | New, reflects most recent TPH analysis procedures required in accordance with the <i>General VPDES Permit for Petroleum Contamination Sites, Groundwater Remediation, and Hydrostatic Tests</i> (9 VAC 25-120). |
| -- | Part I.A.6(e) | Compliance Reporting | New, added to clarify quantification levels for compliance monitoring. |
| -- | Part I.A.6(f) | Total Nitrogen | New, added to define total nitrogen for reporting purposes. |
| Part I.A.5.b | Part I.A.7 | No Discharge of Tank Bottom Waters | No Change. |
| Part I.A.6 | Part I.A.8 | Limitations & Monitoring Page Preamble | Structure and language revised and combined for acuity and streamlining purposes. |
| Part I.A.6(2) | Part I.A.8(a) | Sampling and Reporting Requirements | The intermittent discharge frequency from these outfalls may prevent a sampling event from occurring on a minimum basis of once per monitoring period. Therefore further sampling instructions have been added via this footnote for monitoring periods in which no discharge occurs in order that the permittee remains consistent with previous sampling practices and current agency policy. |
| Part I.A.6(1) | Part I.A.8(b) | Effluent Monitoring Frequencies | No Change. |
| -- | Part I.A.8(c) | Compliance Reporting | New, added to clarify quantification levels for compliance monitoring. |
| -- | Part I.A.8(d) | Significant Figures | Wording revised for clarity. |
| -- | Part I.A.8(e) | TPH Test Method Requirements | New, reflects most recent TPH analysis procedures required in accordance with the <i>General VPDES Permit for Petroleum Contamination Sites, Groundwater Remediation, and Hydrostatic Tests</i> (9 VAC 25-120). |
| -- | Part I.A.8(f) | Total Nitrogen | New, added to define total nitrogen for reporting purposes. |

| Changes to Special Conditions and Other Changes | | | |
|-------------------------------------------------|-----------------|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| From | To | Special Condition Changed | Rationale |
| -- | Part I.A.9 | Limitations & Monitoring Page Preamble | Structure and language revised and combined for acuity and streamlining purposes. |
| -- | Part I.A.9(a) | Effluent Monitoring Frequencies | No Change. |
| -- | Part I.A.9(b) | Monitoring Frequencies Encompassing Multiple Months | New, added to clarify expected monitoring schedule. |
| -- | Part I.A.9(c) | Net Increase Definition | Added to define net increase of TSS. |
| -- | Part I.A.9(d) | Compliance Reporting | New, added to clarify quantification levels for compliance monitoring. |
| -- | Part I.A.9(e) | Significant Figures | Wording revised for clarity. |
| Part I.A.7 | Part I.A.10 | Limitations & Monitoring Page Preamble | Structure and language revised and combined for acuity and streamlining purposes. |
| -- | Part I.A.10(a) | Sampling and Reporting Requirements | The intermittent discharge frequency from these outfalls may prevent a sampling event from occurring on a minimum basis of once per 6 months. Therefore further sampling instructions have been added via this footnote for monitoring periods in which no discharge occurs in order that the permittee remains consistent with previous sampling practices and current agency policy. |
| -- | Part I.A.10(b) | Monitoring Frequencies Encompassing Multiple Months | New, added to clarify expected monitoring schedule. |
| Part I.A.7.a(4) | Part I.A.10(c) | Compliance Reporting | Revised to more accurately reflect condition. |
| -- | Part I.A.10.(d) | Semi-Annual Nutrient and Sediment Monitoring | Added to define the monitoring duration of the nutrient and sediment monitoring. |
| -- | Part I.A.10.(e) | Total Nitrogen | Added to define total nitrogen for reporting purposes. |
| Part I.A.7.c | Part I.A.11 | No Discharge of Tank Bottom Waters | No Change. |
| -- | Part I.A.12 | Stormwater Benchmark Monitoring Requirements | Added due to the permittee's request that stormwater management requirements be added to the 2015 permit. |
| -- | Part I.A.12(a) | Sampling and Reporting Requirements | New. The intermittent discharge frequency from these outfalls may prevent a sampling event from occurring on a minimum basis of once per 6 months. Therefore further sampling instructions have been added via this footnote for monitoring periods in which no discharge occurs in order that the permittee remains consistent with previous sampling practices and current agency policy. |
| -- | Part I.A.12(b) | Monitoring Frequencies Encompassing Multiple Months | New, added to clarify expected monitoring schedule. |
| -- | Part I.A.12(c) | Discharge Estimation | New, added to due to new regulated stormwater outfalls. |
| -- | Part I.A.12(d) | Annual Nutrient and Sediment Monitoring | New, added to define the monitoring duration of the nutrient and sediment monitoring. |
| -- | Part I.A.12(e) | Total Nitrogen | New, added to define total nitrogen for reporting purposes. |
| -- | Part I.A.13 | Stormwater substantially identical outfalls | New, added due to the permittee's request that stormwater management requirements be added to the 2015 permit. |

| Changes to Special Conditions and Other Changes | | | |
|-------------------------------------------------|-------------|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| From | To | Special Condition Changed | Rationale |
| Part I.B | Part I.B | TRC and Additional Bacteria Requirements (Outfall 101) | Wording and structure changed for acuity purposes. Minimum TRC limitation revised to reflect two significant figures. Fecal coliform limitation added in the event that disinfection is by means other than chlorination. Enterococci demonstration study requirements removed because the permittee successfully completed the study and submitted results to DEQ on 6/21/2007. |
| Part I.C.1 | Part I.C.1 | Notification Levels | Revised threshold value for Antimony to reflect 2 significant figures. |
| Part I.C.2 | Part I.C.2 | Materials Handling and Storage | Revised to require consistency with Best Management Practices. |
| Part I.C.3 | Part I.C.3 | Licensed Operator Requirement | DPOR regulation name changed to match current regulation. |
| Part I.C.4/Part I.C.18 | Part I.C.4 | TMDL/Nutrient Reopener | Revised combined language addresses both nutrient reopener and TMDL reopener. |
| Part I.C.5 | Part I.C.5 | Operation and Maintenance Manual Requirement | Revised to reflect boilerplate language released by OWP&CA on 4/3/2012. |
| Part I.C.6 | Part I.C.6 | Compliance Reporting | Revised to reflect current agency guidance (GM14-2003, IN-3, Pg.15). Language further revised according to regional procedure and for clarity purposes. BOD ₅ QL revised from 5 mg/L to 2 mg/L for consistency with recently adopted VPDES General Permit regulations. QL for Nickel added to reflect current target value in accordance with agency guidance. QL for TPH revised to match QL for Oil & Grease. PCB and TP QLs removed as the parameters are no longer limited or monitored in the permit. Language added to clarify reporting for nutrient species. |
| Part I.C.7 | Part I.C.7 | Effluent Monitoring Frequencies | Language unchanged. Outfall 002 removed because monitoring frequency reductions for these parameters no longer apply for this outfall. |
| Part I.C.8 | Part I.C.8 | Oil Storage Groundwater Monitoring Reopener | Reference to "ODCP" regulation removed because ODCP's are required by the AST regulation. Language revised to account for how the AST regulation addresses both the Surry Power Station and Gravel Neck Station facilities with regard to groundwater monitoring. Unlike the Gravel Neck facility, the Surry Power Station is not specifically required by the AST regulation to conduct groundwater monitoring because it has an aggregated petroleum storage volume of less than 1 million gallons. However, they are required by the AST regulation to implement an early leak detection system, and one of the options for doing this is groundwater monitoring, which Virginia Power has elected to do. |
| Part I.C.9 | Part I.C.9 | Tank Bottom Waters & Pump and Haul Activities | No Change. |
| Part I.C.10 | Part I.C.10 | Intake Trash Racks | No Change. |
| Part I.C.11 | Part I.C.11 | No Discharge of PCBs | Revised language for consistence with what DEQ and EPA have approved for inclusion in permits subject to Steam Electric Effluent Guidelines. |
| Part I.C.12 | Part I.C.12 | Discharges of Uncontaminated Water | No Change. |
| Part I.C.13 | Part I.C.13 | Discharge of Chlorine in Cooling Water | Revised language to match that used as the basis for this special condition (40 CFR 423.13(b)(2)) |
| Part I.C.14 | Part I.C.14 | Radioactivity Regulated by NRC | No Change |

| Changes to Special Conditions and Other Changes | | | |
|-------------------------------------------------|-----------------|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| From | To | Special Condition Changed | Rationale |
| Part I.C.15 | Part I.C.15 | No Discharge of Tank Bottom Waters | Removed "at the Gravel Neck Facility" because the prohibition on discharging tank bottom waters applies to both the Surry Power Plant and the Gravel Neck facilities. |
| Part I.C.16 | Part I.C.16 | Water Quality Criteria Reopener | No Change. |
| Part I.C.19 | Part I.C.17 | Treatment Works Closure Plan | Language revised in accordance with current agency guidance (GM14-2003, IN-3 , Pg. 19). Language further revised in accordance with Staff Decisions (8/7/2012). |
| Part I.C.20 | Part I.C.18 | 95% Capacity Reopener | Revised wording to reflect GM14-2003 (MN-3, Pg. 2). |
| Part I.C.21 | Part I.C.19 | CTC, CTO Requirement | Revised wording to reflect GM14-2003 (MN-3, Pg. 4) and to be consistent with GM07-2008 Amendment 2. |
| Part I.C.22 | Part I.C.20 | Reliability Class | No Change. |
| Part I.C.23 | Part I.C.21 | Sludge Reopener | No Change. |
| Part I.C.24 | Part I.C.22 | Sludge Use and Disposal | Revised to remove reference to the Virginia Department of Health in accordance with GM14-2003 (MN-3, Pg.16). |
| -- | Part I.C.23 | Monitoring Frequencies Encompassing Multiple Months | New, added to clarify the expected monitoring schedule for monitoring periods spanning more than a single month. |
| -- | Part I.C.24 | Concept Engineering Report | New, added in accordance with 6/29/2010 regional staff, and 7/22/2010 water program manager decision to include this special condition in all industrial VPDES individual permits. Second paragraph added to be consistent with GM07-2008 Amendment 2. |
| Part I.C.25 | Part I.C.25 | Whole Effluent Toxicity Monitoring Program | Language revised in accordance with recommendations from OWP&CA. |
| -- | Part I.C.26 | Dredge Sediment Pond Discharge | New, added at the request of the permittee. |
| -- | Part I.C.27 | Beyond Design Basis Pump Testing Discharge | New, added at the request of the permittee. |
| -- | Part I.D | Stormwater Management Conditions | New, added at the permittee's request. Stormwater discharges from this site were previously covered under a No Exposure Certification issued in 2007. In January 2012 the permittee requested a meeting to discuss the fact that Dominion found it difficult to maintain a condition of No Exposure onsite during outages (about every 18 months) due to the influx of very large machinery and the need for storage of replaced turbines. The permittee submitted a Form 2F application to DEQ in May 2012, but did not include monitoring data at that time. Therefore, the boilerplate special condition language from GM14-2003 (IN-3, Pg. 16) was incorporated into Part I.D in order to allow the permittee to submit Part VII of Form 2F with the permit reissuance application. Specific benchmark monitoring was included to reflect Sector O benchmark pollutants. Once testing results are received, the permit may be reopened to incorporate regular pollutant monitoring and WET monitoring. |
| -- | Part I.D.3.f(1) | Allowable non-stormwater discharges | Demineralized water and untreated river water have been added to the list of allowable non-stormwater discharges at the request of the permittee. These types of waters are frequently used at the facility for a variety of purposes and will not add any additional pollutants to the stormwater discharge. |

| Changes to Special Conditions and Other Changes | | | |
|----------------------------------------------------|------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| From | To | Special Condition Changed | Rationale |
| -- | Part I.D.6 | Discharges To Waters Subject To TMDL Wasteload Allocations | Added in accordance with ISWGP (9VAC25-151-10 et seq.) for facilities discharging to the Chesapeake Bay watershed. |
| -- | Part I.D.7 | Discharges Through a Regulated MS4 to Waters Subject to the Chesapeake Bay TMDL | |
| -- | Part I.D.8 | Expansion Of Facilities That Discharge To Waters Subject To The Chesapeake Bay TMDL | |
| Part I.C.17 | Part I.E | §316(b) Phase II Conditions | Revised in accordance with Final Rule for §316(b) of CWA. |
| Part II | Part II | Entire Part | Updated language in accordance with GM14-2003. |
| Items Removed from 2008 Permit Modification | | | |
| Part I.A.1.a | Removed | Limitations & Monitoring Page Preamble | This subpart has been combined with the rest of the preamble to better match regional permit structural preferences. |
| Part I.A.1.b | Removed | Visible Effluent Quality | Removed to reflect regional consistency on visual effluent quality requirements. |
| Part I.A.2.a | Removed | Limitations & Monitoring Page Preamble | This subpart has been combined with the rest of the preamble to better match regional permit structural preferences. |
| Part I.A.5.a | | | |
| Part I.A.7.a | | | |
| Part I.A.2.a(4) | Removed | Fecal coliform sampling | The footnote is redundant to the 2015 Part I.A.3 page and to Part I.B special condition. |
| [Part I.A.4(1)] | Removed | Effluent Monitoring Frequencies Reference | Baseline monitoring frequencies have been applied. Effluent monitoring frequency special condition is no longer applicable. |
| Part I.A.5(1) | | | |
| Part I.A.6(1) | | | |
| Part I.A.7.a(2) | Removed | Rainfall pH Monitoring | pH monitoring has been removed from this permit. The rainfall pH monitoring condition is no longer applicable. |
| Part I.A.7.a.(3) | Removed | Significant Figures | Removed because the limitations were removed. |
| Part I.A.7.a(5) | Removed | PCB Sampling Instructions | PCB sampling is not required for the 2015 permit. |
| Part I.A.7.b | Removed | Visible Effluent Quality | Removed to reflect regional consistency on visual effluent quality requirements. |

21. Variances/Alternate Limits or Conditions: A §316(a) thermal variance is continued in the proposed permit. There have been no substantial changes in the conditions described in Virginia Power's initial request for a variance under §316(a) of the Clean Water Act.
22. Public Notice Information required by 9 VAC 25-31-280 B:
Comment period: Start Date: January 20, 2016 End Date: February 22, 2016
Published Dates: January 20, 2016 and January 27, 2016

Name of Newspaper: *Sussex-Surry Dispatch*

All pertinent information is on file and may be inspected or copied by contacting Brian Wrenn at:

Virginia Department of Environmental Quality (DEQ)
Piedmont Regional Office
4949-A Cox Road
Glen Allen, Virginia 23060-6296

Telephone Number 804/527-5015
Facsimile Number 804/527-5106
Email brian.wrenn@deq.virginia.gov

DEQ accepts comments and requests for public hearing by hand delivery, e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for public hearing, and there are substantial, disputed issues relevant to the permit. The public may review the draft permit and application at the DEQ Piedmont Regional Office by appointment or may request copies of the documents from the contact person listed above.

23. Additional Comments:

Previous Board Action: None

Staff Comments:

- a. *Watershed Nutrient General Permit:* This facility is authorized to discharge total nitrogen and total phosphorus in accordance with 9 VAC 25-820-70.A.2 of the *General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia*. During promulgation of Virginia's *Water Quality Management Plan Regulation* (9 VAC 25-720), this facility was identified as a non-significant discharger according to the definition in the regulation, and therefore the permittee did not receive site specific nutrient load allocations. Existing facilities that were not identified as significant dischargers may, nonetheless, be required to register under the Watershed Nutrient General Permit (and consequently receive individual nutrient load allocations) if the facility has undergone a design flow expansion (municipal dischargers), or has increased its delivered nutrient load to levels that are equivalent to a design flow expansion (industrial dischargers) as outlined in § 62.1-44.19:15 (*Code of Virginia*), and 9 VAC 25-40-70 (*Regulation for Nutrient Enriched Waters and Dischargers within the Chesapeake Bay Watershed*).

For industrial dischargers, agency guidance (GM07-2008 Amd.2, Page 10) asserts that an increase in effluent flow volume should not be used to determine whether there has been an increase in delivered nutrient load from a facility unless the flow rate increase is directly associated with capital construction improvements requiring a Concept Engineering Report. Since Virginia Power has not undergone an expansion or upgrade, the permittee is not required to register under the Watershed Nutrient General Permit, and an evaluation of the facility's delivered nutrient load is not required.

- b. *Monitoring Frequency Reduction:* The permittee has not received any Notices of Violation in the last three years. Due to this good performance, a reduction in monitoring frequency was granted for BOD₅ and TSS at Outfall 101, and for all pollutants that are limited or monitored at Outfalls 102, 103, 104, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122 & 002 in accordance with GM14-2003 (IN-2, Pgs.51-53) for the 2015 permit. Special condition C.7 ensures that if any NOVs are issued, the facility will have to revert to more frequent baseline monitoring. Outfalls 107, 108, 114, 115, 116, 117, 118, 119, 121, 122, & 002 discharge intermittently and increasing the monitoring frequency is unlikely to yield additional data. Outfalls 116, 117, 118, 119, 121, & 122 usually only discharge once every 18 months during refueling outages, which are scheduled events that typically last less than one month. Unplanned shutdowns do occasionally occur, such as during a

hurricane or tornado, however, unplanned shutdowns are solely for safety or equipments repair and the unit is back on-line within hours or 1 – 2 days. During unplanned shutdowns, systems are not drained and rinsed; hence, there are no outage related discharges. Outfall 105 consists of an oil storage tank dike that is discharged 1 to 4 times per year depending on the amount of rainfall. Heavy rain events or several days of rain are needed for a release to occur. Outfall 107, which consists of Package Boilers A & B, are discharged when they are performance tested at a maximum frequency of once per year. Otherwise, they are only used when both nuclear units are shut down, which has only happened twice in the past 13 years. Lastly, Outfalls 114 and 115 are Steam Generator Blowdown systems. Normally, the blowdown is recirculated and cleaned up through the polishing building. Blowdown is only routed to the discharge canal if a cooling water tube rupture or condenser leak occurs, which introduces river water into the condensate/feedwater flow. This would cause sodium and chloride levels to increase to a point where polishing resin beds wouldn't be effective at cleaning the blowdown. Therefore, monitoring frequencies at 1 per 6 months will capture the majority of discharge events for all outfalls with intermittent discharges.

Outfall 108 is a Settling Pond that only discharges 2 to 4 times a year following a period of heavy rains or following compressor wash. The 2007 permit required monitoring 1 per month for flow, pH, TSS, and O&G. The monitoring frequency has been reduced to 1 per 3 months to capture the majority of discharge events.

Please note that the monitoring frequency reduction analysis for TSS at Outfall 113 resulted in an increased monitoring frequency of 1 per 3 Months (from 1 per 6 Months). This was due to a single data point of 28.2 mg/L, which is much higher than the overall 5 year average of 8.7 mg/L (6.2 mg/L without this data point). It is staff's judgment that this data point is an outlier and does not represent the typical effluent discharged from this outfall, and therefore, it is recommended that the monitoring frequency for this parameter remain at 1 per 6 months.

- c. *Stormwater Requirements:* Stormwater discharges from this site were previously covered under a No Exposure Certification accepted 9/28/2008. In January 2012, the permittee requested a meeting to discuss the fact that Dominion found it difficult to maintain a condition of No Exposure onsite during station outages (about every 18 months) due to the influx of very large machinery traffic and the need for storage of replaced turbines, and other large machinery, onsite. The permittee submitted a Form 2F application to DEQ in May 2012, but did not include monitoring data at that time. Therefore, the boilerplate special condition language from GM14-2003 (IN-3, Pg. 16) was incorporated into Part I.D of the 2015 permit in order to allow the permittee to submit Part VII of Form 2F with the permit reissuance application. Once testing results are received, the permit may be reopened to incorporate regular pollutant monitoring and WET monitoring. In the interim, and during the rest of the permit cycle, the permittee is expected to develop and maintain a SWPPP and utilize control measures including BMPs in accordance with Parts I.D.3 and 4. Outfalls 050 and 051 have not discharged since the ponds were installed in 2011 and for a discharge to occur, a very heavy multi-day rainfall event, such as a hurricane or a couple of consecutive northeasters would be necessary.

Sector-specific stormwater language, Sector O "Steam Electric Generating Facilities", has been omitted from the Part I.D special condition language. However, benchmark pollutant monitoring for iron has been included in Part I.D.5 to reflect analytical monitoring requirements of Sector O stormwater discharges because these discharges have not yet been characterized.

- d. *316(b) Agency Coordination:* On April 24, 2015, the facility requested an alternate schedule for meeting the final BTA requirements under the 316(b) final rule signed August 15, 2014. Upon receiving the alternate schedule request, DEQ made an interim BTA determination of the existing technology and operating procedures based on data provided by the facility. In accordance with 40CFR 125.98(h), DEQ initiated coordination with USFWS and NMFS on April 30, 2015. USFWS submitted comments on May 7, 2015. NMFS did not provide any comments on the application. The draft permit package was submitted to the agencies on January 12, 2016. Comments from USFWS were received February 4, 2016. No comments were received from NMFS. See **Attachment K** for further details.
- e. *Permit Expiration Prior to Reissuance:* This permit is being reissued subsequent to expiration due to administrative delays.

- f. *VDH-Office of Drinking Water (ODW) and VDH-Division of Shellfish Sanitation (DSS):* The VDH-ODW indicated no objection to the existing discharge. Coordination with VDH-DSS indicated that the existing discharge would not change the current shellfish harvest designation (see **Attachment M**).
- g. This permit reissuance is non-controversial. The staff believes that the attached effluent limitations will maintain the Water Quality Standards adopted by the Board.
- h. *Planning Concurrence:* The discharge is in conformance with the existing planning documents for the area.
- i. *EPA Comments:* The draft permit was sent to EPA on December 2, 2015. EPA responded on December 29, 2015 stating that they had no comments concerning adherence to impaired waters requirements. Please see **Attachment N** for EPA's full response.
- j. *Permit Fees:* The permittee is considered to be current on their annual maintenance fee, last paid on September 24, 2015.
- k. *VEEP Status:* The permittee is not a participant in the Virginia Environmental Excellence Program.
- l. *E-DMR Status:* The permittee is an e-DMR participant beginning 4/19/2012.
- m. *Local Government Notification of Public Notice:* A copy of the public notice for the 2015 permit reissuance was mailed to the Crater Planning District Commission, the Surry County Administrator, and the Chairman of the Surry County Board of Supervisors on January 12, 2015, in accordance with the Code of Virginia, §62.1-44.15:01. No comments regarding the permit action were received.
- n. *Coordination with DCR:* Coordination with DCR was initiated on 9/27/2012. DCR responded on 10/22/2012 stating that they do not anticipate that the permit reissuance will adversely impact natural heritage resources or state-listed threatened or endangered plant and insect species (see **Attachment M**).
- o. *Application Waiver:* The permittee submitted a request for, and was subsequently granted, a waiver from 24-hour composite sampling from Outfall 002. Please see **Attachment O** for Virginia Power's sampling plan as well as a copy of the application waiver granted by DEQ.
- p. Special standards "z", and "ESW-11" do not apply to the segment of the river basin to which this facility discharges. Special standard "a" is addressed via a limitation for Fecal Coliform at Outfall 101(see Item 16 of this fact sheet for more information). See Item 25 of this fact sheet for further information regarding special standard "bb".
- q. *Miscellaneous station activities:*
 - The station periodically dredges sediments accumulated in the James River in front of the intake structure. Water from dredging activities settles in the existing sediments management pond and is then directed to the intake canal where it mixes with once-through cooling water and discharged through Outfall 001.
 - In addition, in response to the 2011 events at the Fukushima Japan nuclear facility, Dominion is in the process of expanding capabilities to response to a BDB event (i.e., natural disasters that results in damage beyond the design of the unit). As part of this effort, Dominion is obtaining back-up mobile water pumps that need to be tested periodically. Condensate water will be used to test the pumps and the water will be discharged to the intake canal of the settling pond.

Please see **Attachment P** for more details on both of these activities.

Owner Comments: Owner comments and DEQ responses can be found in **Attachment Q**.

- 24. Public Comment: Public comments were received from the permittee and USFWS during the public comment period. See **Attachment R** for the comments and DEQ's responses.
- 25. 303(d) Listed Segments and TMDLs:

Outfall 001 / Outfall 052:

During the 2010 305(b)/303(d) Integrated Water Quality Assessment, the James River was considered a Category 5A water ("A Water Quality Standard is not attained. The water is impaired or threatened for one or more designated uses by a pollutant(s) and requires a TMDL (303d list).") The Aquatic Life Use is

impaired due to excessive chlorophyll *a*, inadequate benthic community, and past dissolved oxygen exceedances. The Fish Consumption Use is impaired due to a VDH advisory for PCBs; in addition, kepone is considered a non-impairing observed effect. The Recreation Use was fully supporting and the Wildlife Use was not assessed.

In the draft 2012 Water Quality Assessment, the river was assessed as Category 5D. The Aquatic Life Use is impaired due to excessive chlorophyll *a*, inadequate benthic community, and past dissolved oxygen exceedances. The Fish Consumption Use is impaired due to a VDH advisory for PCBs; in addition, kepone is considered a non-impairing observed effect. The Recreation Use was fully supporting and the Wildlife Use was not assessed.

Outfall 002 / Outfall 050:

During the 2010 305(b)/303(d) and draft 2012 Assessments, the unnamed tributary was not assessed for any Designated Use. It is therefore considered a Category 3A water.

Outfall 051:

The stream was not assessed in the 2010 or draft 2012 Water Quality Assessment (Category 3A).

Outfall 053:

Stormwater outfall 052 discharges to the mesohaline James River at rivermile 2-JMS029.27. The James River was considered Category 5A in the 2010 305(b) cycle and Category 5D in the draft 2012 report. The applicable fact sheets are attached. The Aquatic Life Use is impaired due to excessive chlorophyll *a* and dissolved oxygen exceedances during the summer period in segment JMSMH. The Fish Consumption Use is impaired due to a VDH advisory for PCBs; in addition, kepone is considered a non-impairing observed effect. The Recreation Use and Shellfish Uses were fully supporting and the Wildlife Use was not assessed.

All Outfall Locations:

The facility was addressed in the Chesapeake Bay TMDL, which was approved by the EPA on 12/29/2010. The TMDL allocates loads for total nitrogen, total phosphorus, and total suspended solids to protect the dissolved oxygen and submerged aquatic vegetation acreage criteria in the Chesapeake Bay and its tidal tributaries. The Surry Power Plant discharge was included in the aggregated loads for non-significant wastewater dischargers in the oligohaline James River estuary (JMSOH). The stormwater outfall discharge to the mesohaline James River estuary (JMSMH) was not addressed. The nutrient allocations are administered through the Watershed Nutrient General Permit; the TSS allocations are considered aggregated and facilities with technology-based TSS limits are considered to be in conformance with the TMDL.

a. Chesapeake Bay TMDL, chlorophyll-*a*, benthic impairments, and dissolved oxygen impairment:

This facility discharges directly to James River in the Chesapeake Bay watershed in segment JMSOH. The receiving stream has been addressed in the Chesapeake Bay TMDL, approved by EPA on December 29, 2010. The TMDL addresses dissolved oxygen (DO), chlorophyll *a*, and submerged aquatic vegetation (SAV) impairments in the main stem Chesapeake Bay and its tidal tributaries by establishing non-point source load allocations (LAs) and point-source waste load allocations (WLAs) for Total Nitrogen (TN), Total Phosphorus (TP) and Total Suspended Solids (TSS) to meet applicable Virginia Water Quality Standards contained in 9VAC25-260-185.

Implementation of the Chesapeake Bay TMDL is currently accomplished in accordance with the Commonwealth of Virginia's Phase I Watershed Implementation Plan (WIP), approved by EPA on December 29, 2010. The approved WIP recognizes the "General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed of Virginia" (9VAC25-820) as controlling the nutrient allocations for non-significant Chesapeake Bay dischargers. The approved WIP states that for non-significant Municipal and Industrial facilities, nutrient WLAs are to be consistent with Code of Virginia procedures, which set baseline WLAs to 2005 permitted design capacity nutrient load levels. In accordance with the WIP, TN and TP WLAs for non-significant facilities are considered aggregate allocations and will not be included in individual permits. The WIP also considers TSS WLAs for non-significant facilities to be aggregate allocations, but TSS limits are to be included in individual VPDES permits in conformance with the technology-based requirements of the Clean Water Act. However, the WIP recognizes that so

long as the aggregated TSS permitted loads for all dischargers is less than the aggregated TSS load in the WIP, the individual permit will be consistent with the TMDL.

40 CFR 122.44(d)(1)(vii)(B) requires permits to be written with effluent limits necessary to meet water quality standards and to be consistent with the assumptions and requirements of applicable WLAs. This facility is considered a Non-significant Chesapeake Bay discharger because it is an existing facility with a nutrient load equivalent to a permitted design capacity flow of less than 100,000 gallons per day into tidal waters. This facility has not made application for a new or expanded discharge since 2005. It is therefore covered by rule under the 9VAC25-820 regulation. In accordance with the WIP, TN and TP load limits are not included in this individual permit, but are consistent with the TMDL because the current nutrient loads are in conformance with the facility's 2005 permitted design capacity loads. This individual permit includes TSS limits of 30 mg/L that are in conformance with technology-based requirements and, in turn, are consistent with the Chesapeake Bay TMDL. Implementation of the full Chesapeake Bay WIP, including GP reductions combined with actions proposed in other source sectors, is expected to adequately address ambient conditions such that the proposed effluent limits of this individual permit are consistent with the Chesapeake Bay TMDL, and will not cause an impairment or observed violation of the standards for DO, chlorophyll a, or SAV as required by 9VAC25-260-185.

The Regulation for Nutrient Enriched Waters and Dischargers within the Chesapeake Bay Watershed, 9VAC25-40, does not regulate discharges of stormwater; therefore, the permittee's stormwater discharges are not subject to the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia, 9VAC25-820. Although the stormwater requirements of this permit do not include numeric limitations, it is consistent with the Chesapeake Bay TMDL through the SWPPP. The goal of the SWPPP is consistent with that of the TMDL, which is to minimize pollutants to the maximum extent possible.

- b. Polychlorinated Biphenyl's (PCB's): The permittee submitted effluent data for all seven PCB aroclors required by Attachment A using the proper test method (608). All PCB aroclors were reported less than the DEQ recommended QL (<1.0 µg/L). Therefore, this facility's discharge is not expected to cause or contribute to the PCB fish consumption impairment.

26. Fact Sheet Attachment Guide:

| | |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Attachment A | Flow Frequency Memo, VIMS Mixing Study |
| Attachment B | Flow Diagram, Outfall Location Map, Sewage Treatment Plant Diagram, Stormwater Outfall Location Map, Well Location Map and Sludge Hauling Route |
| Attachment C | Topographic Map and Aerial Photographs |
| Attachment D | Materials/Chemicals Used/Stored Onsite |
| Attachment E | Ambient Data from Monitoring Stations 2-JMS041.27 & 2-JMS050.57 |
| Attachment F | Facility Site Inspection |
| Attachment G | Effluent Screening Data, Form 2C Data, and DMR Data |
| Attachment H | Effluent Limitation Analysis (MSTRANTI & STATS Printouts) |
| Attachment I | Federal Effluent Guidelines (Steam Electric Power Generating Cat.) and DEQ/Dominion Combustion Turbine VPDES Permitting Discussion |
| Attachment J | WET Evaluation and Associated OWP&CA Guidance |
| Attachment K | 316(b) Documentation |
| Attachment L | NPDES Permit Rating Worksheet |
| Attachment M | VDH and DCR Concurrence |
| Attachment N | EPA Review Response |

| | |
|--------------|------------------------------------------------------------------------------|
| Attachment O | 5/27/2010 Application Waiver |
| Attachment P | Dredge Sediment Pond Discharge and Beyond Design Basis (BDB) Pump Testing |
| Attachment Q | Owner Comments and DEQ Responses |
| Attachment R | Public Comments and DEQ Responses |